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General Articles

RECENT OBSERVATIONS ON CANINE DISTEMPER IMMUNISATION*

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Carré showed conclusively that there existed a disease in dogs, commonly termed "Distemper," with which was associated an ultra-visible virus. He demonstrated the presence of the virus in the blood and in the nasal discharges of affected dogs, especially in the early stages of the infection and showed that it was possible to infect young susceptible dogs by injecting either the discharges or blood in a filtered or unfiltered state. Carré's work was opposed by many and it was not until Laidlaw and Dunkin by their carefully controlled researches confirmed that the virus was the all-important pathogen in distemper, that Carré's original findings were universally accepted. Following Carré's work, several European workers—most notably Puntoni—attempted the immunisation of dogs by methods in which tissues of affected dogs which contained distemper virus were used, specially brain and spleen after treatment under certain conditions with formalin. When Laidlaw and Dunkin had proved that the virus was the essential cause of distemper, they studied methods of active immunisation. They showed that in suitably affected dogs the maximum concentration of virus was in the spleen and mesenteric glands. They made use of these tissues in the preparation of the product to which they applied the name "Distemper Vaccine." They also used formalin on these tissues in the preparation of the vaccine. These workers clearly demonstrated that the injection of this vaccine into healthy susceptible puppies produced an immunity of such a degree that the injected puppy could withstand an infective dose of fully virulent virus seven days later. Former workers had depended on the use of vaccine alone in protecting dogs against distemper, but the English workers showed that though such a high degree of immunity was produced by the use of vaccine, it was of a temporary nature only and within a short period the animal was again susceptible. (We ourselves have shown that demonstrable immunity is present in five days after vaccine is injected, that the degree increases till about the 14th day when it reached its maximum; it then begins to fall and, as a rule, after about a month following the injection of vaccine little or no immunity can be detected). Laidlaw and Dunkin made use of the fact that vaccine produced good immunity in the elaboration of the "vaccine-virus" method of immunising dogs. It consists, as you know, of injecting vaccine and, after a period, a dose of living virus which produces a much more lasting immunity than does the vaccine alone. I am not satisfied that a dog so treated and never exposed to infection is permanently immune. I think that even after an injection of living virus, if the dog is rigorously isolated and not exposed to any distemper virus infection the degree of immunity may gradually fall and ultimately the dog may once more be susceptible. In most protected dogs, however, exposure to virus infection occurs from time to time while the degree of immunity is high. This exposure acts as a further stimulus and causes the immunity to become higher still. Such an exposed dog will, of course, show immunity for a very long time. In the original Laidlaw-Dunkin method, the period elapsing between the injection of the vaccine and virus was seven days. We recommend an interval of 14 days because our numerous experiments show that the immunity induced by the vaccine is higher at 14 than at seven days. This "vaccine-virus" method was practised for some considerable time and is still used in this and other countries quite extensively. Before concluding their researches, Laidlaw and Dunkin were able to produce in dogs a hyper-immune anti-virus serum and, following this work, the "serum-virus" simultaneous method of immunising dogs against distemper was investigated and shown to be of considerable value.

The results following the use of this method may not have been as satisfactory as those following the vaccine-virus method, but, on the whole, the method must be considered of value. This method was practised in this country for some little time until some veterinary surgeons, notably Comerford, Wilkinson and Spicer, adopted a modification. They, working independently, practised a method whereby the virus was injected first and the dose of serum was given after an interval of some hours instead of simultaneously with the virus. Each of these observers has published his results which must be considered satisfactory. I may say here that

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we have shown on many occasions that the injection of virus followed even after one day or more by an injection of serum, gives rise to a satisfactory degree of immunity. We practise this method in testing batches of virus and serum before issue. The exact interval between the injection of virus and serum depends, to a very large extent, on the infectivity of the virus and the potency of the serum. It is not found possible to standardise all batches of virus and serum to a constant standard. We know that every batch is of a minimum potency, but we can never say exactly the maximum potency of any batch, specially of virus. After much experimentation with batches of virus and serum of all grades of potency, I believe that an interval of one hour between the two injections is the optimum.

In practising any of these methods of immunisation, one of the essential points is that living, potent virus be used. In the early days of the issue of products for distemper immunisation it was customary to send out virus in a liquid form. This was an emulsion of spleen tissue from infected ferrets. Such virus, however, soon lost its potency and by experimentation, we showed that virus in such a form could not be regularly transported satisfactorily for even fairly short distances. We therefore set to work to devise a means whereby the " life " of the virus would be preserved over long periods, and we were able to produce dried virus which has now been issued for some years and which we have shown may retain much of its potency even when transported to distant parts of the world and back again. Our investigations are being continued all the time, but as far as we can see there is no hope of the virus ever being issued in a liquid form.

At one time we had hoped to evolve a product consisting of virus so attenuated that it would not cause a reaction in susceptible dogs but would still be antigenic and so produce immunity. Up to the present, we have not succeeded in this, though the work of Perdrau and Todd, in which methylene blue is added to a suspension of virus and the whole emulsion exposed to the rays of a pointolite lamp, has opened up new researches which may be important in the immunisation of dogs against distemper. Our experiments confirm Perdrau and Todd's work in that we have shown that it is possible to alter virus, by the method they describe, to such an extent that it is no longer infective but is highly antigenic. The preparation of such a material on experimental lines is fairly simple, but to produce large quantities which have to be available on demand, is quite another matter. In all distemper work, the initial virus content of the material used in the preparation of these products is all important. I have already explained that one of the great difficulties in our work is to prepare virus of constant potency. If several susceptible animals are inoculated with the same virus and destroyed at the same time after infection, it does not follow that their tissues will contain the same amount of virus in each case. In my opinion, before Perdrau and Todd's observations in connection with distemper virus can be applied in a practical way, we will have to study much more intimately, methods for estimating the virus content of tissues and methods of keeping such infected material at a constant potency. The method, however, holds out much hope and naturally we continue our investigations regarding it.

Some veterinary surgeons do not feel inclined to use living virus on their clients' dogs and they practise the use of vaccine only. At one time, the use of two or more doses of vaccine was practised to a considerable extent in this country, but field observations showed that although a considerable degree of immunity was produced by their use, it was not of lasting order and within a period of months, the treated dogs might again become susceptible. Our laboratory experiments indicated that the duration of the immunity from two doses of vaccine was of considerable length. We showed later, however, that much depended on the original potency of the tissues used in the preparations of the vaccine and we have now come to the conclusion that although two doses of vaccine produced a high degree of immunity which may last for several months, unless during that interval the dog is exposed to natural infection with distemper virus, he will again become susceptible and may develop distemper when exposed to infection.

My opinion is often asked regarding the method whereby dogs should be immunised against distemper and, based on a considerable amount of experience, I usually suggest the " virus-serum " method with an interval of one hour between the two injections. I do this for several reasons. There is nothing wrong with the vaccine-virus method and provided that practitioners take the necessary precautions of isolating the dog and having him under their observation during the whole of the treatment, all should go well. It is very necessary, however, that only dogs in a healthy condition be injected with distemper vaccine and I hold that the veterinary surgeon should have the dog under his observation for at least one week before injecting vaccine and should only inject vaccine provided he is satisfied from his examination of the dog over that period that the dog is in a state of good health and has not, in the interval, been exposed to infection with distemper or any other infectious disease. Further, it is necessary to observe how the dog responds to the injection of vaccine. All dogs do not

respond similarly; in the majority of cases no departure from the normal state of health is observed. In a few cases, however, a rise of temperature may be recorded or the dog may show some sign of general malaise. The veterinary surgeon must decide for himself whether or not the dog is in a fit state to receive an injection of living virus on or about the 14th day following the injection of vaccine. He must remember that the virus he is to inject is a living substance. Very occasionally, after the injection of the living virus, the dog may show some degree of reaction on the fourth or fifth day in spite of the fact that he was injected with vaccine previously. It is necessary, therefore, to have the dog under observation for at least one week following the injection of virus. In all, therefore, the veterinary surgeon should be in close touch with the dog for about a month before he can be satisfied that the animal has been satisfactorily immunised.

Veterinary surgeons are certainly becoming better acquainted with the pitfalls in connection with this method but even now, occasionally, reports reach us concerning troubles occurring either during or soon after the immunisation has been carried out. The state of health of the dog before the vaccine is injected, is very important. Not only is it necessary to ensure that the dog's temperature is normal and that the dog is apparently healthy, but the veterinary surgeon should make sure by having the dog under his observation, that there is no risk of any latent disease being present in the animal. Recently a paper published in America has drawn attention to the fact that dogs may be apparently healthy and in a day or two after receiving distemper vaccine, have gone down with typical distemper. We have experienced the same thing in this country. All dogs do not respond equally to the action of distemper vaccine. I have stated before and I still hold the opinion that there exist some few dogs which make much less response than usual to an injection of vaccine as far as the production of immunity is concerned. When these dogs receive virus they respond somewhat as does an unprotected, susceptible dog. This is why it is as necessary to watch the dog carefully, for at least a week after the virus has been injected and to carry out immediate treatment, should any trouble occur. Of course, incidental troubles also occur which have no connection whatever with the immunisation process. Veterinary surgeons must differentiate between these and troubles in which the immunisation has played a part.

One of the chief reasons I have for suggesting "virus-serum" method with an interval of one hour between the two injections, is that the period during which the dog should be observed, is short; this is of considerable importance to the practitioner and his client. The injection of the dose of serum soon after the virus is given, should prevent further action of the virus. I would point out, however, that in some few highly sensitive dogs, a reaction to the virus on the fourth, fifth or sixth day after it was injected, may still be found, despite the injection of serum. In such cases I always advise the injection of 10 c.c. of serum whenever the first rise in temperature occurs. I think it very unwise to wait until a marked rise in temperature has occurred, because by that time, secondary invaders may have caused infection and this may lead to endless complications.

Also, if the temperature is allowed to remain high for a considerable time, *e.g.*, one or more days, pathological changes may occur in the membranes separating the circulation in the central nervous system from the general system, and so virus may be allowed to penetrate and settle down in the central nervous system and thus give rise to acute nervous complications or, later, chorea. If serum, however, is injected whenever there is evidence that all the virus has not been destroyed, as shown by the *first* rise in temperature, then, as a rule, there is an uninterrupted recovery without any unpleasant sequelæ. While on this subject, may I point out that dogs which have suffered from or are subject to hysteria, do not form suitable subjects for immunisation by this method and I would advise veterinary surgeons to consider very carefully whether or not they should undertake to immunise such subjects, by any method. The vaccination is invariably blamed when hysteria recurs in a susceptible dog.

From time to time our attention is drawn to the fact that puppies which have been immunised have developed what is believed to be distemper, at a later date. We have attempted to visit the various kennels at which such breakdowns have been alleged to have taken place and we have attempted by experiment in which tissues from living and dead dogs have been used, to prove whether or not the dogs suffered from true virus distemper. In the very early days before the virus was of such potency that we knew it would produce good immunity, a few true proved breakdowns did occur, but since we have been able to prepare and issue virus of high potency, we have failed, absolutely, to demonstrate in any one alleged breakdown, that a true virus infection was present. It must be remembered that even to the experienced clinician the differentiation of some canine diseases presents very great difficulty. Our knowledge of canine pathology has not yet advanced sufficiently to enable us to determine with accuracy the various diseases presenting symptoms of a similar type and classified under the term "Distemper." We refuse to accept that any

dog or group of dogs is suffering from virus distemper, unless we can find some evidence of the presence of the virus in the tissues of the animal. It is not always possible to demonstrate the presence of live, active virus, but by means of the complement deviation test, in which the spleen is used as the antigen, a fairly conclusive opinion can be arrived at. We ourselves have, on more than one occasion, set up diseases in dogs which were thoroughly immune to virus distemper and which presented symptoms which well-known canine veterinary surgeons diagnosed as true distemper. One of our problems is to investigate these diseases, and now that we can eliminate virus distemper by immunological methods, our task is made more simple. I hope at some future date to be able to communicate some of the results which are gradually accumulating. One trouble which we have not yet fully solved is the occurrence of swellings at the site of injection of virus, weeks or months after the injection has been made. I am not yet in a position to state the cause of these swellings. Pathologically, we know their nature and we are hopeful from the work we are carrying out, that we will soon be able to advise regarding their prevention.

Distemper immunisation is an accomplished fact. The methods practised to-day are satisfactory, but the veterinary surgeon must always bear in mind that he has a large part to play in making any method successful. No matter how carefully the products are prepared and tested, their application in the field is the decisive feature of their usefulness and this is in the hands of the practitioner.

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Discussion

Invited by the President to open the discussion, Dr. W. M. Scott, in the course of his remarks, said that his one regret was that the essayist had not made his paper more provocative: Major Dalling's statements were thoroughly orthodox and ultra-cautious. In the circumstances he was afraid his own observations must be mainly supplemental. In considering diseases, and especially specific diseases, had it ever occurred to them how jealously nature guarded her secrets? At first sight one almost inclined to the view that she was deliberately setting up barrier after barrier to thwart man on his voyage of discovery, and yet on reflection was this not in keeping with the cosmic law of life, for if man gained his objective without effort what would life be? With all his knowledge and learning, however, man had failed in one respect, *viz.*, the conquest of environment. Was not distemper essentially an environmental disease? Let them take, for example, the old-fashioned disease-resisting Scotch collie and compare him with his prototype the disease-susceptible show-yard specimen of to-day—or a pack of hounds herded together like a flock of sheep in a pen—and note how they fell easy victims to distemper. Or again, let them look at the lady's lap dog housed in a human and not an animal environment. Could it be wondered at that disease was so rampant among canines? He had drawn their attention briefly to environment and the vicious circle it created, but he offered no solution for its correction and conquest, the whole subject being too revolutionary, as they knew. But this being so, how were they going to circumvent environment and its pernicious effects? By raising the natural powers of the animal body to the highest plateau of increased resistance, and thanks to the master minds of Dunkin, Laidlaw, and Dalling—who by their labours had placed in their hands a biological product of great value—this was now possible.

He gathered from his observations that Major Dalling favoured the sero-virus prophylactic to the vaccine-virus method. With regard to the former he could not speak, never having used it, but the latter had given him unqualified success, although his experience had been small compared to that of some others. He could only claim to having inoculated some 200 to 300 odd cases in all, and that without a breakdown. In one case there was a swelling at the seat of injection, the size of a walnut and in another one, the size of a large potato. The essayist's observation with regard to the use of alternative virus interested him greatly, and if it could be produced without reducing the antigenic powers, the pitfalls which some experienced would be lessened. Major Dalling had wisely reminded them that in using the virus they were dealing with a virulent, living element and hence crude manipulation must be taboo. In his own work he used a very fine needle and after withdrawing the antigen he made it a practice thoroughly to wipe the needle with cotton wool soaked in surgical spirit, his object being to prevent, so far as possible, any of the virus becoming housed in the cutis. Personally he did not see any danger whatever in using the active virus provided one was thorough in one's methods, and this included the careful examination of the subject. He did not, however, put too much reliance upon the thermometer as an index of good health in dogs, especially those of the neurotic type. From a practical point of view it would be impossible to estimate the reactive responses of the animal body, but he hoped the time would come when their researchers could give them a standardised antigen. When that stage was reached they could expect more homogeneous results.

Finally, he would like Major Dalling to clarify the following point: the essayist had, he believed, advocated one hour between the two injections. They knew that a vaccine, by stimulating the natural immunising forces of the body complex, produced active immunisation, while a serum, charged as it was with already hyper-immune bodies, produced passive immunisation. Consequently, the latter (so to speak) acted as in a prescription. If these deductions held good and the immuniser was anxious not to overcharge the body complex to a breakdown point, why not administer the serum at a time which allowed a sufficient interval for its complete absorption into the blood stream before the antigen was injected? Following up those perhaps hypothetical points, would Major Dalling tell them how long it took the serum to become completely absorbed, and how long the virus; how long did passive immunity (serum) exist; of any reason why serum and virus should not be combined, and why it was that the virus retained its vitality in the dry state and not in solution?

The discussion was continued by Mr. Stewart Wood, who, while doubting his ability to discuss the paper scientifically, said he was quite capable of offering a hearty welcome to Major Dalling whom he was pleased to meet again after a lapse of some seventeen years. (Applause.) He knew what an excellent worker he was, and he had the greatest respect both for his work and his opinions. With regard to temperature, they all, he took it, paid great attention to that, but personally he always took temperature and pulse, and if the two did not agree he pinned his faith to the pulse. There was another point upon which he would like to ask Major Dalling his views, and that was with regard to hysteria. They no doubt had different theories as to the causes of hysteria, but one thing he had noticed was that if they got hysteria in young dogs, in about six weeks' time they would get convulsions and probably distemper, and he could not help feeling there was some very close connection between hysteria and distemper. He had also seen hysteria following inoculation with this vaccine and virus, and he thought it was a possibility, at any rate, that there was some connection between the two. Concerning swellings, they were undoubtedly a very nasty complication when one got them, and he had tried all sorts of expedients, but none was really satisfactory, unless perhaps it was that of excision.

Miss A. Cust remarked that she would like to know what their experience had been in diluting the virus. She found it was apt to go into lumps and that it required a great deal of shaking and care to dissolve it properly.

Mr. J. B. White said he quite agreed it was very necessary to take every precaution, but the trouble with the ordinary practitioner was that when inoculating hounds at walk it was extremely difficult to keep them under suitable observation and also to do it at an economic figure. After all, economics must enter into these things, and although one tried to keep the costs down to a reasonable figure it was very difficult to do so and at the same time carry out all the necessary precautions. One was very loath to introduce these dogs into kennels and inoculate them there because he was afraid there were very few kennels that were strictly free from distemper. Major Dalling had also told them that chorea might arise as the result of other affections. It seemed to him that in saying that, Major Dalling was rather knocking the bottom out of their diagnosis, because in many cases of distemper one was in great doubt until the nervous symptoms finally cropped up, and it was going to make diagnosis very much more difficult for the practitioner if it was a fact that chorea might be due to other causes. He would like to know if the essayist could tell them whether this was likely to be a fairly general thing or whether it was quite an exception. He would also like Major Dalling to tell them something about the treatment of those cysts, because the only thing he had found to be of much service was excision.

Mr. B. Gorton, referring to Major Dalling's observation concerning the variation in temperatures in dogs, said that it seemed to him that if they were not to depend upon the thermometer, it was going to make it very difficult to find out whether a dog was well to start with.

Mr. J. B. White remarked that there were some dogs in which the temperature would shoot up even as the result of a ride in a car, while Dr. Scott said that he placed very little reliance upon the temperature in dogs.

The President (Mr. J. F. D. Tutt) quite agreed that the virus was very hard to dissolve and stated that it would be a great help to them if it could be sent down in a different form. Personally he had found that giving the vaccine first and following it up with the virus in 14 days was the most satisfactory method. With regard to chorea, he had always understood that it only followed after true distemper, but Major Dalling had suggested that there were secondary invaders that could also cause the condition.

Mr. White remarked that he had had an outbreak of apparent distemper in a litter of young puppies about eight weeks old; all were immediately injected with serum and only one was lost. No further steps were taken to immunise them, but about four months after they started to scour and one went down with the nervous symptoms. He would like to ask Major Dalling whether, if one used the serum to stop an outbreak, he would recommend immunising afterwards?

The Reply

Major Dalling in reply, expressed his thanks to the members for the manner in which they had discussed his paper and, in particular, to Dr. Scott for the way in which he had opened the discussion. He had asked him a number of questions and he would endeavour to answer them to the best of his ability. Dr. Scott told them that he had had good results with the vaccine-virus method, and that in the main had been true with his own cases, but he still liked the virus-serum method because they completed the process much more quickly. He was sure they would all like to see a standardised antigen, but that remained a problem for the future. With regard to Dr. Scott's question in connection with the period elapsing before the serum was completely absorbed; the serum when injected into the dog could still be detected in that dog's blood for several days. As to how long it was before the virus was absorbed, the answer was, within a very short time after it got into the blood circulation. The next question, he believed, was why not combine serum and virus? The moment serum and virus were brought into contact with one another, the virus was destroyed. He could not give them an answer to the question why it was that the dry virus lasted longer than the wet, but experience taught them it was so. He had very great respect for the virus in its dry state. Major Wood had raised the question of temperature in dogs and there was no doubt that dogs varied very much in their response to the stimuli which affected temperature. With regard to the connection between hysteria and distemper, he did not think there was any true connection between the two, but he did know from experience that if a dog was subject to hysteria and it was injected with virus or vaccine severe attacks might occur.

As to the swellings to which reference had been made, pathologically they were granulous tissue reactions, and Major Wood's was the most satisfactory way of dealing with them, *viz.*, to excise them and remove them altogether. Reference had been made to the difficulty of inoculating hounds at walk. It was quite true that if they collected a lot of hounds into a kennel and attempted to immunise them, especially if they used the vaccine-virus method, they would in all probability have a considerable amount of trouble. One hound infected with distemper going into the kennel might set an outbreak going in that kennel and if vaccine had already been put into the hounds, after a day or two they might have the whole lot down with distemper. He

agreed that observation such as he had elaborated could not be carried out at walk and in using the vaccine-virus method there must always be a certain amount of risk. Although he had detailed the precautions that should be taken, one knew that in many cases those precautions were not observed and that nothing happened—probably because the materials used were highly antigenic. If it was a question of economy and the hounds must be done at walk, there must always be a little risk in connection with them, and the veterinary surgeon must be prepared to take that risk and to advise the owner that such risk existed, but he had no doubt that the surgeon would also point out to the owner that the risk was not very great. He did not think he had stated that chorea was due to secondary invaders. What he said was that it was sometimes due to causes other than distemper virus infection, and that had been brought home to him on more than one occasion. Pathologically the picture of chorea from distemper virus was very different from that due to other causes. With regard to the breakdown mentioned by Mr. White, it depended whether the puppies were exposed to the virus when the serum was injected and it depended also on the potency of that virus. He agreed with Mr. Tutt and with Miss Cust that the virus was difficult to dissolve. It was a powder and the finer any powder was the more difficult it was to put into solution, but he thought the material that was now being issued as a diluting agent dissolved it better.

THE CONTROL OF POULTRY DISEASES*

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In the flocks of poultry in Great Britain are to be found some of the finest specimens of domesticated poultry in the world. Our country maintains her position as the home of pedigree stock of the highest type of all classes. This stock has been produced by the industry and meticulous care of stock owners in this country who have devoted their knowledge to the production of these flocks. Many of these owners had that special gift of animal management: persons who were born and reared in the country and at an early age developed the faculty of detecting the perfect form of stock and appraising the varying qualities at their real value. They knew animals in health and disease and were quick to detect any deviation from the normal healthy bird or from the goal to which they were striving to attain. They have left us a great heritage. Persons having these gifts are not frequently encountered.

Since the War many persons have become poultry owners with little knowledge of animal management. Obviously such stock owners set out with a great handicap and their problems are very real.

The Causes and Extent of the Wastage Caused by Disease in the Poultry Industry

It is profitable to trace the course of many of these owners. A few years ago the poultry industry presented a bright and paying proposition and many people seeking an open-air occupation entered the ranks of poultry owners with no knowledge of animals in health or disease. A relatively small piece of ground was acquired by purchase or hire and a small number of adult birds purchased. At the end of the year the results were found to be amazingly satisfactory and without hesitation the number of birds was increased without a proportionate increase in the accommodation of housing or land. Fortune favoured the poultry farmer and prosperity seemed to be assured. Outbreaks of contagious diseases had not marred the picture, but disease will occur sooner or later under such conditions. One fact which always astonishes me is the manner in which these people enter the business of live stock ownership, expending almost the whole of their capital, without seeking professional advice.

Let us examine the various pitfalls which await the uninitiated when commencing to build up a poultry farm without advice.

Land is obtained regardless of its suitability to carry healthy poultry stock. Once land is purchased or rented and found to be unsuitable for poultry farming it means a financial loss to change. The land may be definitely poor; it may recently have carried diseased stock, or may not be suitably placed for markets. A market near at hand for the produce of the farm is a very valuable point.

In the lay-out of the farm no advice is sought to plan the farm in such a manner that units of a suitable size can be arranged and isolation maintained should an outbreak of disease occur.

Finally, adult stock are purchased, which permits the introduction of many disease conditions. Probably the beginner knows little or nothing of bacillary white diarrhœa and even fails to purchase B.W.D.-free stock. Apart from this disease, the owner may purchase birds affected with practically any of the diseases caused by a bacterium or a virus. Most of these diseases can be obviated by commencing with eggs or day-old chicks from a reliable source. These are all points of great importance in the establishment planning, stocking and management of a poultry farm. Overcrowding of houses or land should never be permitted in the history of a poultry farm. When overcrowding is allowed disease will occur and spread with great rapidity. Disease is usually the limiting factor in a poultry farm and makes all the difference between a profit and a loss.

In the course of my official duties I find that many owners come for professional advice when an outbreak of disease has been smouldering weeks, or even months, with an appreciable death rate or loss. During this period many of the so-called cures have been tried without avail. The urge for professional advice comes suddenly when losses are very heavy and disease is found in all parts of the farm.

The prevention of the introduction of disease on to a farm is the point to which all must strive. I consider all money spent in taking advantage of all scientific methods known to us for the prevention of disease, to be money very wisely invested.

I would stress strongly this important point of seeking early professional advice, because I know the value of such a procedure. When unexplained deaths occur, send the carcase of an affected bird to a laboratory and obtain the best possible advice, and whilst awaiting the result of the examination isolate the contact stock and stop all movement of birds. If possible only one person who does not tend the main flock should be in charge of the isolated flock, and the indiscriminate traffic of persons and goods on the farm should be prevented.

* Paper presented to the Harper Adams Poultry Conference, 1934.

To prevent the introduction of disease on to a farm, it is essential that a careful and close examination of the flock must be maintained by a responsible person. All newly purchased stock or birds returning to the farm should be isolated for a period of one month and regularly examined during this period, and found to be without symptoms or lesions of disease before being permitted to join the main flock. Crates from other owners should not be allowed on the premises, and those returned after being on other farms should be immediately disinfected in an efficient manner. I would urge all owners to take full advantage of all the means that science has placed in our hands to prevent disease, by the methods of detecting this or immunising stock against particular diseases.

From official figures we know that the value of the poultry industry in this country in 1933 was about £33,000,000. It is estimated that the losses from disease directly and indirectly amount to about £4,000,000, a truly colossal figure. This money should be in the pockets of the poultry owners instead of lost in the carcases of diseased birds thrown into incinerators.

Perusing figures issued by the authorities in charge of laying trials, we find a remarkably heavy increase in the percentage mortality of the birds. The figures supplied with reference to the National and Harper Adams laying trials show a yearly increasing percentage mortality and may be taken as an example.

Years.	*Percentage Mortality.*
1926-7	5·0
1927-8	6·0
1928-9	6·8
1929-30	8·4
1930-1	9·0
1931-2	12·5

These figures refer to about 5,500 laying birds and it is necessary to remember that these laying trial birds are the selected specimens from many of the best flocks in the country.

This distressing increase in the mortality from 5 to 12·5 per cent. during six years requires the most careful investigation and consideration.

It is valuable to note the figures published in the United States of America.

Years.	*Percentage Mortality.*
1921-5	13·2
1925-9	38·4
1929-33	55·5

Also it is stated in the American publication that "Demonstration poultry farm records of many States show that 40 to 60 per cent. of ready-to-lay pullets fail to complete the first laying year, because of mortality and culls, many of the latter being removed because of the anticipation of death."

Comparing these two groups of percentage mortality figures, we find a danger sign. Our figures show a percentage mortality of 12·5, which is closely approximating the figure issued in America for the years 1921-1925, of 13·2 per cent. In the following five years the percentage mortality in America jumped to 38·4 per cent. The question arises, are our methods of breeding, incubating, hatching, brooding, rearing, housing, etc., going to produce for us anything like a corresponding jump in the mortality figures?

A large amount of our losses is not due to specific diseases but rather to lack of stamina and vigour, causing the birds to break down under the strain of heavy laying. Ceaseless effort should be made to produce birds with the hall mark of vigour and stamina as the first and most valuable point. If we are producing birds with a potentially high egg production, but which are unable to stand this strain, our values are wrong and we shall destroy the heritage which has been given to us.

Place the highest value upon stamina and vigour and many desirable points will be added.

The Measures Indicated to Check the Present High Wastage in the Poultry Industry

Obviously we all know only too painfully that the losses from culls and disease are abnormally high. You know your own weekly losses from culls and deaths. In the laboratories, benches are filled daily with carcases for examination, and letters arrive describing the heavy losses on the farms.

There is no point in becoming pessimistic; rather should we be stimulated to renew our energies to improve every step from breeding to the laying bird. I am a firm believer in vigorous culling. Probably in one way the modern method of hatching is too good: many of the chickens should not have been hatched. The weakly bird in a unit is a perpetual danger. This is the bird which is most likely to fall the victim of an infectious or contagious disease. Unfortunately before the disease has killed the affected bird, in most cases this bird has multiplied the infection and exposed the other members of the unit to the danger of infection. This is the beginning of an epidemic. The infection is brought to the farm by divers means and the weakly offer suitable "soil" for the infection.

I look forward keenly to the day when the poultry owners of this country will band themselves together and wipe out the scourge of bacillary white diarrhœa. The Government of Northern Ireland has set us a good example in this direction. In the United States of America 12 of the 48 States have adopted a routine system of blood testing and elimination of reactors. The position of Holland with regard to this disease is of great interest. The poultry industry determined to attempt to clear this infection from the flocks in their country. They formed a society, all the members of which were bound to blood test all their stock, the test being carried out at the Government laboratory. Before the blood was collected all the stock were fitted with sealed leg bands and all the birds shown by the test to be carriers were required to be forwarded to the laboratory for identification and destruction. Later this rule of a society was placed on the statute book.

Until some similar system is adopted in this country one can scarcely expect a very large reduction in the incidence of this disease. The carriers detected by the agglutination test are usually removed from the flock but tend to reach other flocks *via* markets, a most unsatisfactory state of affairs. Certain flocks are cleared of infection but the total incidence of the disease in this country is not reduced to the extent to which the amount of blood testing that is carried out would suggest.

When preparing to detect carriers in your flocks use only the method employed by the well-known laboratories in this country. Only the most reliable and well tried method of detecting the carriers should be permitted.

There is ample evidence to show that the industry does not yet take full advantage of all

the knowledge which science has placed at our command. The tests for the detection of bacillary white diarrhœa, fowl typhoid, *Bact. ærtrycke* and *Bact. gaertner* infection; fowl pox and fowl typhoid vaccines, and the tuberculin test for the detection of tuberculosis, are not yet employed so universally in this country as the results of their use merit.

Many diseases of poultry have been investigated and methods prepared for their prevention and eradication, but much still remains to be done. Science needs your support and more workers in this field.

Our knowledge of the cause or methods of prevention or cure of several serious diseases is extremely small. When the causal agent of a condition has been discovered there still remains the important point of prevention. Until that is established we are in a relatively helpless position.

This was well illustrated last year when two very serious diseases made their reappearance in this country after an absence of many years. Newcastle disease was diagnosed on a large poultry plant and caused the death of many thousands of birds. On each occasion on which this disease has been diagnosed in this country the origin has been quite obscure. Similarly this autumn the industry suffered from the most serious outbreak of fowl cholera with which this country has had to contend. The origin of this outbreak was infection in imported stock. Fowl cholera is diagnosed from time to time in some of our home flocks which have not had contact with imported stock, but this type of infection is usually of a mild form and rarely causes a serious death rate.

Obviously two ways are open to us to prevent the introduction of this very virulent form of fowl cholera and other serious diseases from abroad—prohibition of imports or strict isolation of all birds coming from overseas with routine examination during the period of quarantine.

The recent experience of these two highly infectious diseases has shown the desirability of legislation to handle similar situations. It is therefore proposed to introduce to Parliament a Poultry Bill, applying to Great Britain, to obtain powers to prohibit or regulate the importation of poultry with a view to preventing the introduction of serious poultry diseases (by defining quarantine stations for the reception of poultry or otherwise).

Further, to devise and put into operation measures to deal with any devastating disease non-existent in this country at the present moment, but which might be introduced from abroad, such as fowl pest, a term which is used to include two highly fatal virus diseases known as Newcastle disease and fowl plague.

Also, to regulate or prohibit the importation of eggs intended for hatching, or the use of imported eggs for hatching. Other measures in the bill will materially help in preventing the spread of disease.

This Poultry Bill is essentially framed to help the poultry owners. By these measures, if and when they become law, the danger of introducing diseases of a particularly virulent and dangerous type from abroad would be considerably reduced and should be definitely prevented. Also, should any devastating disease occur which has been introduced into this country by any means, the Ministry of Agriculture and Fisheries would be empowered to deal with the outbreak in the interests of the industry, limit the spread of the disease and thus safeguard the flocks of this country.

Clinical Communication

THE ETIOLOGY OF ENZOÖTIC BOVINE HÆMATURIA

A Preliminary Note

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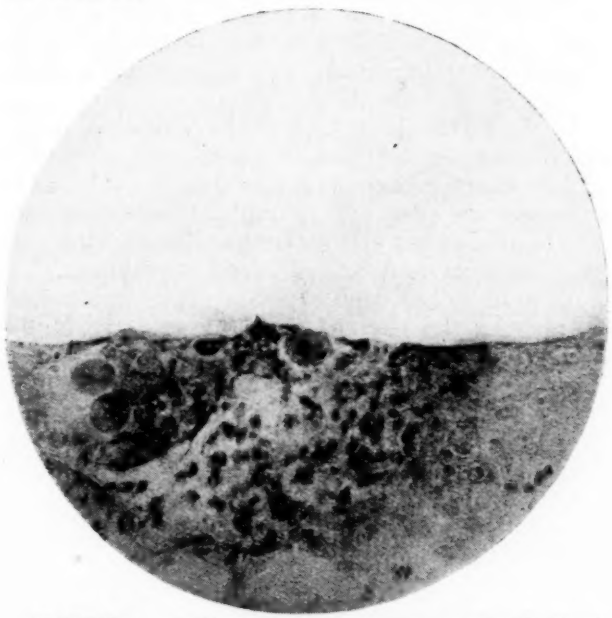
Among the animal diseases which have defied elucidation, notwithstanding the very considerable amount of scientific investigation that has been expended upon them in most countries of the world, chronic hæmaturia of cattle would appear to be one of the most outstanding. The disease is known to occur in most countries of the world. In India, it occurs in the Kumaun Hills in the United Provinces, in the Nilgiris in the Madras Presidency, in the Kulu Valley in the Punjab, and in the Darjeeling district in Bengal. Many theories have been advanced to explain the causation of the disease: in recent years the trend of opinion in most countries, notably in Australia and Canada, has been towards a chemical deficiency theory.

The etiological researches upon hæmaturia at Muktesar took a definitely hopeful turn on March 7th, 1932, when the author discovered some very interesting "bodies" in the course of histological studies upon specimens of preserved bladder and kidney tissues, collected from local hæmaturia cases. When some peculiar spherical bodies were detected in the urine of all the six clinical cases of the disease then at Muktesar, the securing of "data of considerable value and promise" was mentioned in the Annual Report of this Institute for 1931-32 (p. 15). They appeared to differ from body cells. They were globular bodies whose nuclei could be discerned with difficulty in unstained wet smears; these bodies appeared to be absent from the urine of healthy cases, but were present in the quiescent stages of hæmaturia. To ascertain if these bodies were present in samples of hæmaturia urine from other provinces in India, enquiries were made from the Heads of Veterinary Departments in the provinces where the disease occurs, *viz.*, Bengal, Madras and the Punjab. On the arrival of samples from the provinces the same obscure structures were detected, and the possibility of a Schistosome origin was suggested. In the Annual Report, 1932-33 (p. 15), the failure to obtain confirmation of the above suggestion has been mentioned, but the observation of "a definite host reaction" against the "bodies" left no doubt that they were parasitic and foreign. In size they were larger than the usual body cells, and they definitely had a greater depth of focus. Since

an occasional " body " appeared to have engulfed rare red corpuscles, or to possess a vacuole, they were described in the above Report as " peculiar macrophage-like cells," and the possibility that these were *Entamœba* was pursued by means of the cultural technique of Boeck and Drbohlaw (1925). The first results have already been mentioned in the Annual Report of 1932-33.



Definite proof has now been secured that the hitherto obscure disease is a parasitic disease, caused by a large protozoan parasite. The parasite has repeatedly been seen in sections of diseased urinary bladder, and also in the urine. The parasite is characterised by a nucleus with a small karyosome and a peripheral layer of fine chromatin beads. From the characters of the parasite seen in sections and in urinary sediments on the warm stage of the microscope, it appears to belong to the phyllum *Rhizopoda,* resembling *Entamœba histolytica* in its pathogenic properties and characters. Differences from the latter parasite of man having been seen, the designation *E. kamala* is tentatively proposed. Fuller details are being published in an early issue of the *Ind. J. Vet. Sc. Ani. Husb.*

Work in connection with experimental transmission and cure, etc., is now in progress.

Mr. David Ainsworth, a member of Preston Borough Council, left John O'Groats on October 2nd on his horse Queenie, and rode to Land's End by easy stages, keeping mostly to main roads. He covered from 30 to 40 miles a day, and altogether Queenie wore out four sets of shoes. Mr. Ainsworth said the trip was comfortable and uneventful; he lost about 15 lb. of weight, but was perfectly fit. At the end of the journey, on October 28th, Queenie, who is six years old, was examined by a veterinary surgeon and found to be in excellent condition.

Abstracts

[**The Prophylaxis of Bovine Tuberculosis.** Guérin, C. (Veterinary Departmental Chief, Pasteur Institute, Paris, France). (1934.) Twelfth Internat. Vet. Congress, New York. Paper No. 16. *Author's Summary.*]

Since the International Veterinary Congress in London in 1930, no new observations have been made which would give rise to the hope that a new approach to the problem of tuberculosis prevention in cattle will finally be found. The two conceptions of prophylaxis are still as follows: The one is based on the use of tuberculin and the other on the production of a state of allergy.

The progress made in our understanding of the pathogenesis of tuberculosis, during these latter years, forms the basis of all the prophylactic measures. General as well as local tuberculosis infection, contracted in the great majority of cases through the alimentary canal, includes first a parasitic stage of variable duration, but which may be long. During this stage the infecting bacillus behaves like a true foreign body, well tolerated, without reaction on the part of the animal organism and without a positive reaction to tuberculin. This condition of occult infection which cannot be detected by any biological test can be demonstrated experimentally and forms the necessary and sufficient reason for the unreliability of the Bang method of prophylaxis based on the use of tuberculin.

The idea of a tuberculous parasitism dominates the entire history of tuberculosis infection and of its prophylaxis.

The knowledge of allergy and of characteristics connected with the allergic state has thrown new light upon the problem of tuberculosis immunity. This state, which occurs in all subjects that react positively to the tuberculin test, constitutes for them a special and somewhat paradoxical situation enabling them effectively to resist superinfections of tuberculosis.

The allergic state transforms the body of a subject into infertile soil for the virulent bacilli of superinfection which, in this case, behave like inert bodies incapable of producing new lesions.

The oral or subcutaneous introduction of living but non-disease-producing tuberculosis bacilli, such as B.C.G., into the body, is capable of producing an allergic state in man as well as in animals. It affords them, also, the benefit of a resistance against tuberculosis infection comparable to that which tuberculous animals possess naturally. The harmlessness of the B.C.G. vaccine for cattle is not questioned by anyone. The benefit which has resulted from its application in a number of European countries justifies the popularity which it enjoys.

In the human species, the person who reacts positively to the tuberculin test has an advantage; he possesses a marked resistance to the disease. The prevention of tuberculosis in man by means of B.C.G. tends therefore toward this end: to make the subjects allergic without danger by the use of living tubercle bacilli which have become harmless.

Among cattle, the animal which reacts positively to the tuberculin test is considered an outcast; it is despised in every respect. It must have but one destination, the abattoir. Nevertheless, tuberculosis is one and the same in all species. That which is true for the human species holds also for the bovine species. However, we find ourselves confronted with two irreconcilable theses of prophylaxis. The scientific and rational one considers the tubercle bacillus, on account of its dissemination, as an unavoidable adversary which we must know how to fight by taking advantage of the fortunate characteristics which the bacillus has put at our disposal (generalisation of the allergic state through vaccination). The second, inoperable and antiquated (proved by 40 years of experience), aims at providing for the cattle that theoretical state which would result from the destruction of the last bacillus of Koch (slaughter of the allergic).

This latter method might be justified in countries with a low tuberculosis morbidity and with extensive financial resources, if it did not rest upon the erroneous belief that a herd free from tuberculin reactors to-day is definitely protected against infection. However, this infection will inevitably take place, on the morrow, in some of the cattle, because the tuberculosis virus will be carried to them from without by the commercial exchange of animals which have simple and occult infection and are non-reactors, and also by certain wild animals, especially by rodents and even by man himself.

In those European countries in which the tuberculosis morbidity is high, this method of tuberculosis eradication would be so burdensome that no one for a moment would even dream of applying it. Moreover, the few attempts which have been made to try out this method have shown its utter inadequacy.

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[**Deficiency Diseases.** Marek, J., and Wellmann, O. (Royal Hungarian Veterinary High School, Budapest, Hungary.) (1934.) Twelfth Internat. Vet. Congress, New York. Paper No. 34. *Author's Summary.*]

Vitamin-deficiency diseases (avitaminoses) are differentiated from other diseases due to partial hunger or noxious feeds and to true hunger and undernourishment.

Vitamins belong to various classes of substances which, entirely different from energy-giving organic and mineral food substances, are nitrogen-free organic combinations endowed with specific biologic action, in extremely small quantities and with almost hormone-like properties.

The definition of vitamin-deficiency diseases as such and in distinction from other metabolic disorders has made considerable progress through uniform international nomenclature, like vitamins A, B, C, D and E, and furthermore through the creation of international standards and units for different kinds of vitamins. Vitamins are known either in their prodromal state (provitamin) or in the final state and, in part, in their pure crystalline form.

In the metabolic action of the vitamins, interrelations exist between vitamins and hormones which exert either a supporting or inhibiting influence or even one of mutual compensation. There also exists a close interaction of vitamins with mineral and organic food substances.

Vitamin D has been experimentally recognised as playing the part of a simple security factor in times of insufficient or improper calcium, magnesium, and phosphorus supply. In regard to other kinds of vitamins, further investigations must determine whether or not they are also dispensable under the conditions of optimal supply of organic and inorganic food substances, an opinion which would be suggested by some observations and experimental results.

Spontaneous A-avitaminosis is observed primarily in chickens three to nine months old, rarely in other birds, and especially during the spring after green feed or other sources of vitamin A have been lacking for two to three-and-a-half months; this avitaminosis often brings about a disease picture which resembles that of enzoötic coryza (nutritional roup); such cases may be associated with keratomalacia and xerophthalmia or with characteristic pustular nodules in the mucous membrane of the crop and œsophagus, keratinisation of the epithelium, and certain nervous symptoms and optical disturbances. After a much longer incubation period, swine and cows may occasionally become affected with slight conjunctival and nervous symptoms (blindness, incoördination, spasms). A quick cure is possible in slightly developed cases through feeding of green feed or cod-liver oil.

Spontaneous B-avitaminosis occurs primarily in fowls owing to a deficiency of vitamin B_1 as the result of unbalanced feeding of polished rice, wheat, or barley, also of insufficient grain feeding under exclusion of fresh vegetable feed and open-air habitat. Polyneuritic phenomena are observed accompanied by rapidly progressive lameness, emaciation, dyspnœa, and ending in death. A few cases are also recorded in dogs, after unbalanced feeding of polished rice, meat, and rice flour; in cats, after continuous feeding of sterilised meat; in rabbits and solipeds, after feeding of polished rice and rice straw. The disturbances consisted of muscular stiffness,

muscular spasms, and lameness in the region of the croup. Rapid recovery can be brought about through supplementary feeding of yeast, bran, unpolished cereal grain, green feed, and raw meat.

Spontaneous C-avitaminosis or scorbutus is rarely observed in animals but was seen in dogs after continuous feeding of decomposing meat, unbalanced feeding of dog biscuits, cooked cereals plus animal fats, well-cooked milk or meat, and in swine after feeding of sterilised milk. The disease picture corresponds either to that of scorbutus in adult man (ulceration of the tumefied gum, loosening and softening of teeth, hæmorrhages) or to that of Moeller-Barlow's disease (plethora, swelling, ready bleeding of the gums, subperiosteal hæmorrhages, osteoporotic changes). Quick recovery is possible through feeding of glandular organs, green feed, potatoes, beets, also through addition of lemon or apricot juice.

Spontaneous D-avitaminosis, in the form or rachitis, osteomalacia, and spasmophilia, occurs in animals not as an obligatory but only as a conditional vitamin-D deficiency disease, especially if the calcium and phosphorus supply of the body is at the same time quantitatively and qualitatively insufficient. From the etiological standpoint, therefore, an insufficient calcium and phosphorus supply plays the deciding rôle. Depending upon the feeding characteristics and the metabolic peculiarities of a species, breed, and individual, the etiologically deciding factor is either absolute lack of calcium in the feed, as occurs in Carnivora, or absolute lack of phosphorus, in ruminants, on account of the latter's need of roughage, which, especially in regions of phosphorus-deficient soil, may be very poor in phosphorus. In swine the most frequent etiological factor seems to be the predominance of phosphorus pentoxide over calcium oxide and magnesium oxide in the feed (negative earth alkali-alkalinity), whereas excessive predominance of calcium oxide (strong positive earth alkali-alkalinity) is to be taken into consideration only in overdoses of calcium carbonate. In Herbivora loss of calcium can be brought about by unbalanced sour feeding. Under such unfavourable conditions of the mineral metabolism, vitamin D has the task of aiding in the resorption economy or proper change in elimination of the mineral substances in question; the noxious influences upon the calcium and phosphorus metabolism are thereby excluded and the necessary mineral substances brought into the metabolism. Whether or not vitamin D influences immediately the formation of bones and the phenomenon of calcification is not decided.

Histologically rachitis in the animal corresponds to the rare late rachitis in man on account of the greater osseous development in animals at the critical time and of the heavier mechanical load on the skeleton. Accordingly the fibrosis of the medulla, the hasty formation of bones, and the osteoclastic destruction of bone in areas of strong mechanical usage characterise the rachitis in animals and do not justify the identification of this condition with osteodystrophia fibrosa.

True fibrous osteodystrophia may develop, however, in conjunction with rachitis, osteomalacia, and osteoporosis if, under the stimulus of an extraordinary mechanical load, medullary fibrosis, osteoclasia, and hasty bone construction become very extensive in degree and kind and give rise to distension or deformation of certain bony parts.

In uncomplicated cases, the therapy of rachitis and osteomalacia, as well as their prevention is successful through securing an optimal calcium and phosphorus supply, through direct vitamin-D treatment with vitamin-D preparations and cod-liver oil, or through indirect therapy with ultraviolet rays for the activation of ergosterin which is present as provitamin in the body.

Spontaneous E-avitaminosis has not been observed because vitamin E is widely distributed in feedstuffs. This avitaminosis is characterised by sterility (testicular atrophy in males, lack of conception, or abortion, in females) and by decrease in milk production.

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[**Diseases of Young Animals.** Williams, W. L. (Professor of Obstetrics and Research, Professor in the Diseases of Breeding Cattle, Emeritus, New York State Veterinary College, Cornell University, Ithaca, New York, U.S.A.) (1934.) Twelfth Internat. Vet. Congress, New York. Paper No. 38. *Author's Summary.*]

The diseases of young animals are ordinarily considered from the viewpoint of the mortality of the fœtus or of the newborn. In this report the study of the non-mortal diseases of bovine fœtuses and of young calves as they may affect their vigour and fertility as adults is aimed at; it is assumed that the principles involved are alike for the young of all domestic mammals.

The observations presented are derived from a large dairy herd in intimate contact with a very large herd of beef cattle, thus affording ample opportunity for comparisons. The foundation dairy animals were derived from eight large breeding herds widely scattered geographically and well designed to carry into the new herd any and all genital infections common in dairy cattle. When assembled at their destination, all females were placed in a common herd, assuring the passage of any dangerous infection to all individuals; the immediate contact of the dairy cattle with the beef cattle, of

all ages and both sexes, rendered certain the transmission of any serious contagion from the one breed to the other.

The temperature in the area varies between 50° and 85°F.; no animals are housed; all are dependent on natural forage, and the quality of forage is dependent on the rainfall. All fertile dairy females are retained in the herd as long as they are capable of breeding, hence with the known health of the young calf and its breeding history as an adult, any relation between fœtal and calf diseases to fertility as adults becomes traceable. The influence of two principal factors upon the health of the young is recorded—the influence of the character of the forage as affected by the rainfall, and the method of milk feeding and handling of young calves. The surviving calves are followed to breeding age and their reproductive competence recorded. It is shown that, in this herd, there was extensive and serious arrest in the development of the reproductive systems of dairy calves under certain deficiencies of rainfall and of feeding and handling which did not appear among the contiguous beef cattle. Radical changes in the method of milk feeding and of handling were associated with normal evolution of the reproductive system, and, when breeding age was reached, the reproductive powers were essentially normal, and closely approached or equalled those of the contiguous beef herd.

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[Paratyphoid Diseases in Animals in relation to Public Health. Clarenburg, A. (Bacteriologist in the Central State Laboratory of Public Health, Utrecht, Holland). (1934.) Twelfth Internat. Vet. Congress, New York. Paper No. 14. *Author's Summary.*]

Food poisonings in man in relation to salmonelloses of animals and the precautions against them are discussed.

Former investigations of the ubiquitous occurrence of *Salmonella* are not confirmed. *Salmonella* are observed in the intestinal canal in only a small percentage of clinically healthy cattle. The occurrence of these organisms is based most probably upon an infection relating to salmonellosis of calves.

Post-mortem infection, at least in Holland, is of only little significance with respect to outbreaks of meat poisoning. Most of the outbreaks are based on an intravital infection, in which case the primary salmonelloses are of essential importance. Complete absence of danger for human beings cannot be claimed for any salmonellosis of animals. The opinion, once current, according to which *Salmonella suipestifer* was inoffensive to human beings, is no longer tenable.

Food poisonings can be caused also by infected milk and eggs. Up to the present time *Salmonella* have been demonstrated only in pigeon and duck eggs.

With regard to the occurrence of normal agglutinins in blood sera, it is not always possible to indicate an agglutination titre which proves a *Salmonella* infection. For this reason it is desirable to heat the sera to 56°C.

If, after the bacteriological examination of slaughter animals, *Salmonella* are cultivated from the internal organs in pure culture, the meat must be considered to be infected.

For combating infections in man due to *Salmonella* from salmonelloses of animals, the following suggestions are desirable: Compulsory notification of salmonelloses of animals; minute differentiation of *Salmonella* occurring in man and animals; collaboration between physician and veterinarian and police; uniform methods for the determination of types; distinct description of the genus *Salmonella*.

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[Bovine Tuberculosis in Tropical Africa. Hornby, H. E. (1934.) *East Afr. Med. Jour.* xi, 9-15 (5 refs.)]

It has generally been considered that bovine tuberculosis is a relatively unimportant condition in Tropical Africa, and judging by the reports of the veterinary authorities in Kenya, Anglo-Egyptian Soudan, the Gold Coast and Tanganyika, this is so; though in the case of the last-mentioned, the disease has been known to progress very rapidly in a herd of imported cattle. However, in French West Africa, and in the British Cameroons, infection has spread rather rapidly following its introduction from overseas, whilst in one district of Northern Rhodesia a very large percentage of the cattle are affected. Most records of tuberculosis refer to imported stock, whilst the indigenous cattle appear to be more resistant. The long-horned, straight-backed Ankole cattle appear to be an exception to this rule, for it is recorded, in Uganda, that upwards of 10 per cent. of such cattle are tuberculous. In Africa the zebu appears to be remarkably immune from tuberculosis, the resistance appearing to be a breed characteristic, and not due to an open air existence. Nevertheless, it is worth noting that tuberculosis is the most serious infectious disease of the zebu in Madagascar. Some difference of opinion exists regarding the incidence of this disease amongst the zebu in India; figures which are quoted vary between complete absence and 15 per cent.

E. J. P.

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[Lowenstein's Method Applied to Bovine Blood. (Trans. title.) van Oijen, C. F. (1934.) *Acta vet. neerland.* 1. 5-64. 9 tables. 10 charts.]

Lowenstein's method of culturing tubercle bacilli from the blood in cases of tuberculous

bacillæmia of human beings, has been applied to the examination of bovine blood. Extensive work of this nature has been carried out upon human beings, and those who are interested are referred to a review of the subject by G. S. Wilson (1933). [Medical Research Council, Spec. Rep. Series, No. 182.]

van Oijen was unable to demonstrate a tuberculous bacillæmia in cows or small rodents, but he demonstrated a local vascular infection in a few cases, *e.g.*, in the venous blood coming from a tuberculous udder, and in the heart blood of a tuberculous animal. He was also able to culture tubercle bacilli from the blood of animals artificially inoculated with this organism.

E. J. P.

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[The Propagation of the Virus of Vesicular Stomatitis in the Chorio-allantoic Membrane of the Developing Hen's Egg. Burnet, F. M., and Galloway, I. A. *Br. Jour. Exp. Path.* 1934. *15.* 105-113.]

Galloway and Elford (*Br. Jour. Path.*, 1933, *14*, 40) have already recorded that the results of filtration experiments with standardised collodion filter membranes indicated that the virus particles of the virus of vesicular stomatitis of horses and cattle were very much larger than those of the virus of foot-and-mouth disease, and that this was regarded as direct evidence of the distinct individuality of the two diseases. It is further shown that the virus of vesicular stomatitis will survive and propagate in the chorio-allantoic membrane of the developing hen's egg, and that the virus of foot-and-mouth disease will not survive under similar conditions. The present paper deals with this latter observation and records the experiments showing that the virus of vesicular stomatitis can be propagated in this manner. Both immunological types of the virus were employed, the "Indiana" and the "New Jersey," and the types of reaction produced and the histology of the lesions are described. It is probable that the rate of multiplication in the egg is very rapid, for a dose of virus which produces no lesion in a guinea-pig may produce lesions in the eggs from which virus can be recovered by sub-inoculation into guinea-pigs. The egg inoculation technique was employed also for testing immune sera and gave similar results to guinea-pig tests regarding the immunological difference between the two strains of virus.

Vesicular stomatitis virus is relatively sensitive to the photodynamic action of methylene blue. Irradiated mixtures which give no lesions when inoculated into guinea-pigs are also inactivated for eggs.

R. L.

[On the Salmonella-infection among Foxes and Dogs. (Summary in English.) Watanabe, S. (1934.) *Jour. Jap. Soc. Vet. Sci. 13.* 76-91]

Bacteria which culturally and serologically are identical with *Bact. ærtrycke* have been isolated from five cases of disease in silver foxes and one in a dog. The silver foxes were about two months old and all died after nearly a week with symptoms of loss of appetite and diarrhœa. *Post-mortem* examination indicated hæmorrhagic enteritis with enlargement of the spleen and icterus. The dog died of an obstinate diarrhœa which lasted for one month. *Bact. ærtrycke* was isolated in all cases from the heart blood, spleen, liver, kidney and mesenteric glands.

R. L.

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[The Presence and Significance of Agglutinins for some Members of the Salmonella Group occurring in the Sera of Normal Animals. Lovell, R. *J. Comp. Path. and Therap.* 1934. *47.* 107-134. 5 tables (52 refs.)]

A previous communication (Lovell, 1932. *J. Comp. Path. and Therap., 45.* 27-42) dealt with the presence of agglutinins for the "H" heat-labile antigens of *Salmonella* bacteria in the sera of normal animals. The present work concerns the presence of agglutinins for both "H" and "O" antigens in the sera of similar animals. The sera of normal pigs, cattle, sheep, horses and rabbits have been examined and whilst the majority of the samples of serum from pigs, cattle, sheep and horses agglutinated various "H" and "O" suspensions, the majority of the samples of rabbit sera failed to agglutinate any of the suspensions tested. It is evident that these normal antibodies show an increased frequency at the higher titres with advancing age, whilst in pigs at least, sex appears to bear no relationship to their frequency.

As judged by absorption tests these agglutinins are specific and the specificity is not confined to whole bacteria but is also apparent for the antigenic components of the bacteria. There was no reduction in titres either by saturation with kieselguhr, nor by heating the sera to 56°C. for half an hour.

The failure to isolate *Salmonella* bacteria from the tissues and intestinal contents of a large number of pigs and sheep is pointed out and the literature on their attempted cultivation from normal animals is reviewed. The suggestion that these agglutinins may be due to previous infection with *Salmonella* bacteria is discussed and dismissed. The evidence available, including the induction in rabbits of *Salmonella* agglutinins by the injection of heterologous bacteria isolated from the tissues and intestinal contents of normal pigs, leads the author to put forward

the hypothesis that these agglutinins are due to stimulation by bacteria which are normally present in the intestinal contents or tissues of animals but are not members of the *Salmonella* group. This view is discussed in the light of the recorded experimental work and consideration is also given to analogous work in which it has been shown that specificity in the immunological sense may not correspond to specificity in the sense that it applies to systematic bacteriology. There are ample records of immunisation with a particular bacterium inducing agglutinins for a bacterium wholly unrelated in the systematic sense but obviously related antigenically.

R. L.

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[Cholesterol and Cholesterol Esters in Dog Bile. Quantitative Methods. Wright, A., and Whipple, G. H. (1934.) *Jnl. Exper. Med.* No. 4. 407-425.]

Using a colorimetric method for the determination of the total cholesterol in dog bile, the authors have shown that the normal dog eliminates 0·5 to 1·0 mgm. of cholesterol per kg. per 24 hours, and that the administration of bile salt and diets rich in cholesterol will raise the cholesterol output. Injury to the liver by chloroform decreases both the bile salt and cholesterol elimination, and certain cholagogues, such as isatin and decholin, increase the bile flow without altering the elimination of cholesterol. Stasis of bile and a high concentration of cholesterol may lead to the precipitation of cholesterol and the formation of gall-stones. It has been shown that there are no esters of cholesterol in normal dog bile.

J. A. N.

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Review

THE BRITISH PHARMACEUTICAL CODEX, 1934*

The primary object of the British Pharmaceutical Codex is to provide a book of reference for pharmacists and medical practitioners containing standards for drugs and preparations which are not included in the British Pharmacopœia. The first Codex was published in 1907 and subsequent editions appeared in 1911 and 1923. The introduction of a new British Pharmacopœia in 1932 provided the need for a new and revised Codex, and the work under review is now available. The scope of the book has been considerably extended to provide manufacturers, prescribers and dispensers with a more uniform standard and guide for the composition of the numerous medicaments, which although in fairly constant demand, are not included in the B.P. because of their similarity in action to other drugs, or because their use as remedies has not received general acceptance. In addition, preparations of former pharmacopœias, which have been omitted from the B.P., 1932, but are still in frequent use, are included as preparations of the Codex.

Whilst the book includes all the official preparations of the Pharmacopœia, it also contains a large number of additional formulæ by which drugs may be compounded in a form suitable for administration or application as medicines; and so one finds in it details of practically every agent or preparation that is likely to be used in medicine.

Part I—General Monographs—comprises, in addition to details as to the origin, chemical composition, standardisation, etc., a synopsis of the actions and uses of the agent, and the dose for the human subject in the metric and imperial systems.

Part II—Surgical Dressings—provides specification as to the composition of such materials as bandages, gauzes, lints, plasters, tows, wools and the various protectives.

Part III is a formulary giving detailed instructions regarding the compounding of the various preparations.

Part IV—Appendices—comprises a veritable mine of important miscellaneous information, including tables of weights and measures, atomic and molecular weights, details of reagents and stains, estimation of H-ion concentration, the preparation of colloidal solutions,

* Published by direction of the Council of the Pharmaceutical Society of Great Britain. Distributors in Great Britain: Simkin Marshall, Ltd., Stationer's Hall Court, London, E.C.4.; H. K. Lewis & Co., Ltd., 136, Gower Street, London, W.C.1.

the approximate composition of the more important substances bearing proprietary trade names, etc.

The British Pharmaceutical Codex is a most comprehensive work. It is produced to cater for the requirements of the medical and pharmaceutical professions. As no veterinarians were members of the Codex Committee, the special requirements of veterinary medicine are not included. At the same time, as we possess no specific pharmacopœia of our own, and as the general requirements of animal medicine approximate so closely to those of human medicine, the Codex forms a standard book of reference which will be invaluable to veterinary surgeons.

Reports

GOLD COAST COLONY

Report of the Department of Animal Health for the Year 1933-4

This report of 34 pages, with an appended reference map, deals with the activities of the department in four sections, *viz.*, administration, field veterinary service, veterinary laboratory service, and animal husbandry.

In the administrative section the revenue for the year is shown at £19,405, an increase of over £1,000 on that of the previous year and some £4,000 more than the expenditure. The revenue was derived almost entirely from a tax on cattle imported to the colony from neighbouring countries. The European staff consisted of a principal veterinary officer (Mr. J. L. Stewart), four veterinary officers and a laboratory assistant. There was a native staff of 16 veterinary assistants and three clerks, in addition to a menial personnel. The livestock census is shown at: 172,000 cattle, 684,200 sheep and goats, 81,500 pigs, 4,340 horses, 16,039 donkeys, and poultry (numbers not stated).

The year's work has been devoted mainly to consolidating the favourable position gained by the previous four years' work, during which period rinderpest was eradicated from the colony by a campaign of wholesale active immunisation. (This is a creditable achievement and a good illustration of the value of the serum-simultaneous method of vaccination in countries where rinderpest is enzoötic.) Owing to the prevalence of rinderpest in contiguous territories, annual vaccination of the young susceptible stock has to be continued and additional precautionary measures in the form of a frontier patrol service and detention camps for cattle in transit are maintained.

The suppression of rinderpest has allowed more attention to be devoted to the control of trypanosomiasis, which is the other big menace to animal health in the colony. Satisfactory results already have been obtained from bush clearing. A large-scale clearing experiment has shown such excellent results in the extermination of Glossinæ that it is estimated that considerable areas of the colony could be rendered tsetse-free in this way without great expense.

At the Pong-Tamale Veterinary Station divers farming activities were in progress, in addition to purely veterinary work. Experiments on improvements of fodder and the quality of livestock were undertaken. Courses of training in elementary veterinary science and animal husbandry were given to selected natives who were subsequently sent to outside Government farms to assist in a scheme of general farming improvement. Advice to native chiefs, administrative officers and others interested in the welfare of the livestock community was given. There, also, the native veterinary assistants undergo their training.

In the Laboratory Section work was concerned chiefly with the production of anti-rinderpest serum and rinderpest spleen-vaccine, together with diagnosis of specimens. Some 8,000 doses of spleen-vaccine were prepared for use in the field. The immunity from this product when used alone was reckoned to be about one year, but when virulent rinderpest blood was given a fortnight after the vaccine the resultant immunity lasts, at least, for two years. The preparation of contagious bovine pleuropneumonia culture-vaccine was begun during the year. Amongst the diseases diagnosed during the year were: trypanosomiasis (*T. vivax* 228, *T. congolense* nine, *T. brucei* nine); redwater (*B. bigeminum*); theileriasis of cattle (two species were encountered, *viz.*, *T. mutans*, and a more pathogenic type but without schizonts); anaplasmosis (one definite clinical case was observed showing a mixed infection with *A. centrale* and *A. marginale*); anthrax; contagious bovine abortion; malignant œdema; heartwater in goats (observed in cross-bred animals: the indigenous goats appear to be resistant); spirochætosis and tuberculosis in poultry (the latter disease occurred in imported birds); rabies and pseudo-rabies in dogs; bluetongue and sheep scab in sheep (the latter disease, due to *Psoroptes ovis*, was observed for the first time).

Some experimental work with curative treatment of trypanosomiasis was undertaken, and it was found that tartar emetic and antimosan gave good results with *T. vivax* infection, and a new Bayer preparation called "Surfen C" gave encouraging results in chronic infections due to the same trypanosome.

In the Field Veterinary Section the energies of the staff were concerned with keeping rinderpest from over the frontiers at bay and in

actively immunising the remainder of the susceptible cattle. A modified method of immunisation was carried out on the 30,000 head dealt with, as follows: The animals were first inoculated with spleen-vaccine in doses from 5 c.c. to 15 c.c., according to size and age; five to seven days later they received serum and virulent blood at the usual doses and five days afterwards they received virulent blood alone. The mortality rate was very low as a result. An experiment to estimate the value of goat-adapted virus as a vaccine for cattle proved a failure, since the virus, after three and five passages through goats, appeared to show no attenuation for cattle. An outbreak of contagious bovine pleuro-pneumonia caused some concern and control measures consisted of isolation of in-contacts and slaughter of the affected; culture-vaccine was not available at the time. Outbreaks of canine distemper were common, and an experimental trial with vaccine-virus antigen obtained from England was successful, the virus maintaining its efficacy for the 21 days in transit, on ice. Meat inspection of 209 carcases revealed an incidence of cysticercosis of 20 per cent. Helminthiasis is widespread in all animals.

In the Husbandry Section improvement in quality of the indigenous cattle is reported and attributed to the gradual elimination of the scrub-bull and to an improvement in health of the cattle population generally, following the extermination of rinderpest. The shortage of water in the dry seasons is, however, a serious deterrent to improvement in physique, partly because of the long distances to be covered in search of it. Trypanosomiasis is another menace in this respect. There is, however, some hope of counteracting this by introducing a breed of cattle on the coast known as West African shorthorns, which are alleged to be resistant to trypanosomes (at least, those of their native territory) and which show better qualities for dairy use than the indigenous cattle. This is an interesting breed which has been described by Curson in a recent issue of the *Onderstepoort Journal of Veterinary Science and Animal Industry*, South Africa.

W. K.

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FOOD INVESTIGATION BOARD

Report for the Year 1933

This exhaustive report deals with many subjects of great interest in connection with food, but the parts of most interest to veterinarians are those of Section A (Meat) and Section C (Pork, Bacon and Hams).

In the report reference is made to an historic event, which occurred on July 18th, 1933, when there arrived at Southampton from New Zealand the first commercial consignment of chilled meat carried overseas in an atmosphere to which had been added CO_2. The consignment was a complete success and augurs well for the future transport of chilled beef from Australia and New Zealand, the action of the CO_2 being to inhibit the growth of moulds.

It has been shown that beef can be kept in the chilled condition for 60 to 70 days in an atmosphere containing 10 to 20 per cent. of CO_2. There is a difficulty in holding the gas, but ships are being fitted with gas-tight chambers and eventually chilled beef may be carried at a higher temperature than at present. Hygiene, at all stages, is the great essential in meat preservation, storage and transport. Reference is made to the bacteriological flora found in private slaughterhouses and meat retailers' refrigerators.

Bacon, an important item of the dietary of the people, has received consideration as to principles of curing, and the difficulty of storage without rancidity developing. Successful results have been obtained in the conveying of pork from the Dominions in the frozen condition, defrosting and then converting it into bacon; both bacon and pork can now be stored successfully for considerable periods in high concentration of CO_2. In one experiment mild cured bacon was stored in an atmosphere of CO_2 at a temperature of 0°C. (32°F.) for 18 weeks and found in excellent condition. In another experiment bacon was kept in splendid condition for eight months at a temperature of −3°C. (26·6°F.) and at −10°C. (14°F.).

Important work has also been carried out on the effect of different concentrations of CO_2 on the colour of beef fat, which shows that less than 20 per cent. of the gas must be used, otherwise the "bloom" of the meat is affected.

Muscle consists largely of myosin and myogen, and examination of these two proteins has given some indication of the part they play in *post-mortem* changes. In living muscle myogen is in solution and myosin almost completely undissolved. Up to the time of complete *rigor mortis* no appreciable denaturation of myosin or myogen can be detected, but denaturation takes place rapidly in dead flesh. It has been shown that rigor, or so-called "death stiffening," now seems probably due to change in the water relations of myosin consequent upon the changes in the distribution of ions in the muscle.

The unpleasant odour and flavour of oxidised fats are due to the presence of minute amounts of aliphatic aldehydes, and a method has been worked out by which the presence of the aldehydes in fats can be estimated in quantities as low as 0·001 per cent. This research work must be of great value, in assessing flavour by laboratory methods, in the problem of successful food

(*Concluded at foot of col.* 1, *page* 1365.)

N.V.M.A. Divisional Report

SOUTHERN COUNTIES VETERINARY SOCIETY*

MEETING AT BOURNEMOUTH

The Autumn Meeting of the Southern Counties Veterinary Society was held at the Museum of the Bournemouth Natural Science Society on Friday, September 7th, when Major T. Dalling, M.R.C.V.S., gave a very interesting paper concerning "Some Recent Observations on Canine Distemper Immunisation." It is unfortunate that the giving of such an excellent paper was not made the occasion for a better attendance.

The President, Mr. J. F. D. Tutt, occupied the chair, while the others present were Miss Cust, Major J. Stewart Wood, and Messrs. N. S. Barron, W. Caudwell, B. Gorton, G. Parr, and J. B. White, with Dr. Wm. Scott, and Captain Stirling Webb, as visitors.

The minutes of the previous meeting, as published in *The Veterinary Record*, were taken as read and confirmed.

Correspondence.—(1) From Major J. Facer, Major E. S. Martin, Captain R. E. C. Bullen, Dr. Sheather, Messrs. E. R. Harding, C. Pack, H. C. Rockett and J. T. Turney, apologising for absence. There was no other correspondence.

Nominations and Elections.—On the proposition of Mr. B. Gorton, seconded by Major J. Stewart Wood, the following gentlemen were elected members. Major T. A. Brian Cocksedge, of London; Mr. H. S. Caldwell, of Salisbury; Mr. C. Tyler, of Bournemouth.

Clinical Cases.

(1) Mr. G. Parr exhibited photographs of the feet of a yearling forest pony which he had been called to see and which had a well-formed extra digit on each fore-leg. These arose from behind the fetlock, the metacarpi from knee to fetlock being much thicker and showing a rudimentary bone down the whole of their length.

The pony had been destroyed as hopeless for any practical use, and inoperable.

* Received for publication, October 12th, 1934.

(2) Mr. Gorton asked the members what *post-mortem* lesions they would expect to find in a fatal case of internal hæmorrhage in the dog as the result of being run over by a car.

Mr. Caudwell replied that he would expect to find rupture of the liver.

Mr. Gorton then said that was what he had anticipated finding in a recent case brought to him. Instead of that, he had found the abdomen quite normal but in the chest, the broken end of a rib had punctured the anterior vena cava.

(3) Miss Cust mentioned the case of a small Pomeranian puppy of four weeks which had been dosed for worms with an unknown vermifuge. Following this, the puppy seemed to lose power in the hind legs, so that the stifles bent backwards. Treatment had consisted of good food, exercise, sunshine, radiostoleum and vetostelin, but with no improvement following six weeks' treatment.

Members expressed different opinions, some considering the condition to be congenital, while the majority felt the condition could hardly have been due to the vermifuge.

N.V.M.A. Membership Subscription.—Mr. Gorton raised the question of making the usual subscription to the "National" inclusive of those to the affiliated Associations. He suggested that one payment should include membership of both the "National" and the particular Division in whose area one should reside.

This, he said, was done by the British Medical Association and the Pharmaceutical Society, and he thought if the N.V.M.A. followed suit they would gain in membership.

The Hon. Secretary asked if Mr. Gorton wished to move any resolution, as he understood the question was under consideration by the "National."

Mr. Gorton replied that he did not wish to move a resolution, but merely to put the suggestion before the members.

Miss Cust asked if they might be provided with a list of the members of the Society, the Hon. Secretary promising that this should be done with the next Annual Report.

Next Meeting.—It was proposed that the next meeting be held in Southampton on December 6th.

Paper.—Major Dalling then read his paper, which was followed by a fairly good discussion. [This paper, and a report of the discussion, are reproduced at the commencement of this issue.—Ed., *V.R.*]

The President proposed a very hearty vote of thanks to Major Dalling for his paper, at the same time extending his thanks to Dr. Scott for opening the discussion. The vote was seconded by Mr. Gorton and carried with applause.

J. B. White, *Hon. Secretary.*

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preservation. Experiments are being continued as to determining the rate of bacterial growth at different temperatures and humidity on meat, also to define the value of ozone as a germicide in the preservation of meat and the extent to which this is vitiated by its power to oxidise fats.

T. D. Y.

LAW REPORT

Irish Veterinary Council *v.* Planton and the P.D.S.A.

CASE WON ON APPEAL

In our issue of October 27th we reported that Mr. Justice Sullivan, Mr. Justice Hanna, and Mr. Justice O'Byrne, in the High Court, Dublin, had allowed the appeal of the Veterinary Council from the decision of District Justice Flood, at Limerick, who dismissed two summonses of the Irish Veterinary Council against Geo. F. Planton and the People's Dispensary for Sick Animals of the Poor. The case was remitted to the District Justice to be dealt with on the finding.

The question for the Court was whether the District Justice was right in his interpretation of the word " practise " in the Sub-section in the Veterinary Surgeons Act, 1931, on which he dismissed the summons.

In the original case Mr. Planton had been summoned for practising veterinary surgery contrary to the provisions of the Act mentioned, and the Dispensary was summoned for holding itself out as being prepared to practise veterinary surgery.

The whole proceedings in the High Court are reported below in some detail.

. . . . . .

In the High Court, Dublin, on December 11th, 1933, before Mr. Justice Hanna, a case stated by Mr. Joseph M. Flood (District Justice for Limerick County) arising out of two summonses heard by him in the District Court in which the Veterinary Council, Veterinary College, Ballsbridge, Dublin, were complainants, came on for hearing. In one summons the defendant was Mr. George Frederick Planton, of Ballinard, Glanmorris, North Circular Road, Limerick, the complaint against him being that on June 28th, 1933, at Upper William Street, Limerick, he " not being a registered veterinary surgeon did practise or represent or hold yourself out as practising or being prepared to practise veterinary surgery or veterinary medicine contrary to Section 46 of the Veterinary Surgeons Act, 1931." In the second summons the defendants were The People's Dispensary for Sick Animals of the Poor, of Ardhue, North Circular Road, Limerick, against whom the charge was that they, being a body corporate, practised, or represented or held themselves out as being prepared to practise veterinary surgery or veterinary medicine contrary to Section 46 of the Veterinary Surgeons Act, 1931.

Mr. Michael Binchy, S.C., and Mr. Liston (instructed by Mr. Arthur Cox, Dublin, and Mr. D. J. O'Malley, Limerick) appeared for the Veterinary Council; and Mr. Price, K.C., and Mr. George Cullinan (instructed by Mr. Roger O'Sullivan, Limerick) for the defendants.

Mr. Liston opened the case stated. He said that the People's Dispensary for Sick Animals were a body who owned and managed a motor caravan which operated in Limerick County and the vicinity. They afforded free veterinary attendance and they said that such attendance was limited to parties who were not in a position to pay a veterinary surgeon. George F. Planton was an employee of the People's Dispensary and it was he who actually operated and worked the caravan and attended to the animals. It was established and admitted that they did carry on this work and that Planton had carried out veterinary attendance and also that he was not a registered veterinary surgeon; and of course the Corporation were not registered veterinary surgeons. On the evidence it was proved to the satisfaction of the District Justice that they did not accept any fee from persons for attending the animals further than that there was a little contribution box in the van to which persons could make a voluntary contribution. Counsel read the case stated by District Justice Flood who, having indicated the nature of the summonses, proceeded:—

" In evidence for the prosecution it was proved before me that Christopher McNamara had taken a dog for treatment to the van maintained by the People's Dispensary for Sick Animals in Limerick and it was medically treated by defendant George F. Planton. No charge was demanded or made for the treatment, and McNamara stated that he could not afford to pay a veterinary surgeon's fee.

" On behalf of the defendants there was a good deal of evidence submitted regarding the operation and methods of the People's Dispensary for Sick Animals in Limerick. From this evidence it appeared that the van in which the Society carried on its operations was equipped and presented to the Society at a cost of £350 by Major de Ros Rose, a generous and public-spirited gentleman who has all his life been interested in the welfare of animals. The van, which is in charge of George Planton, operates in Limerick County and one or two other places in the neighbourhood, and it is the only institution of its kind in Ireland. George Planton, whose name does not appear in the veterinary register established and maintained under the Veterinary Surgeons Act, 1931, attends the van and treats sick animals which are brought to him without accepting any fee. Planton had four-and-a-half years' experience of this work and has been in charge of the van in Limerick since 1932. A notice is prominently displayed in the van to the effect that Planton was to refuse cases where he considered that the owners of the animals were able to pay a veterinary surgeon's fee, and Planton stated that he had refused to treat animals in such a case. The animals treated by him were mostly cats and dogs, but sometimes when the owner was in poor circumstances he had treated horses and cows. There was a contribution box in the van for such persons as wished to make an offering towards the fund of the Society in recognition of its work for sick animals. Several gentlemen of standing in Limerick gave evidence regarding the good work done by the People's Dispensary for Sick Animals, and that there was no other method for the humane destruction of animals. Its assistance was often acquired by the Civic Guards for the painless destruction of animals that had been irrecoverably injured. It also appeared that the Society had paid fees to a veterinary surgeon in many instances where the cases submitted to it seemed to demand treatment by a qualified veterinary surgeon and the owner was unable to bear this expense.

" Many people in poor circumstances gave evidence regarding the free treatment of the animals by the Society. The evidence may be briefly and fairly summarised by saying that the People's Dispensary for Sick Animals does very good work in Limerick, and that any interference with its activities would be a loss to the community who

would be deprived of a service which is maintained without any expense to the public.

"From the correspondence produced before me it appeared that the Irish Veterinary Council approved in principle of any scheme which affords proper free attendance of the animals of poor persons otherwise unable to pay the normal professional fee. It was further stated in the Council's letter produced in evidence before me that the interests of veterinary surgeons would be infringed and the Act would be contravened by free attendance then given to animals by those able to pay for such attendance. I had no evidence before me to show me that any such abuse had taken place, and evidence was in fact tendered to show that the services of the People's Dispensary for Sick Animals had been refused to those able to pay a veterinary surgeon's fee. The Veterinary Council, however, required that a registered veterinary surgeon should be employed in connection with the van, but the funds of the Society would not permit these expenses. If this course should be held necessary in order to comply with the provisions of the Veterinary Surgeons Act, it would cause much hardship to the class of persons for whom the services of the People's Dispensary for Sick Animals of the Poor are intended, as in this case the Dispensary would cease altogether. The decision on the case must turn as the meaning put on the words 'practise veterinary surgery' contained in the section under which the prosecution was brought.

"Mr. Cullinan, who appeared as Counsel for the Defence, submitted that practise must necessarily be taken to mean to exercise the functions of a veterinary surgeon in return for a money payment, and as no such payment was ever made in the case of animals treated by the Society, this definition would not apply. The prosecution is the first of its kind taken in the Irish Free State and neither Mr. Cullinan nor Mr. Liston who appeared for the Veterinary Council was able to refer me to any decided case under this or any similar Act of Parliament which would be helpful to me in arriving at a decision. The Act itself in the defining Section does not contain any definition of what the word 'practise' means, nor, after some search, could I obtain any information from any other source.

"In the circumstances I was compelled to give my decision on my own interpretation of the word "practise' in the sub-section. As applied to a veterinary surgeon I interpreted it to mean one who was prepared to treat all classes of animals and every form of animal disease for any member of the public in return for an adequate fee.

"This interpretation would not apply in the present instance since (1) no fee is demanded or paid for the treatment of animals, (2) the services of the People's Dispensary for Sick Animals of the Poor are available only for a limited number of the public—those who are not able to afford a fee to a veterinary surgeon—(3) the treatment given by the Society is practically limited to certain classes of animals, principally cats and dogs. Nor does it profess to treat all cases, as in many instances when the services of a veterinary surgeon appear necessary his fee is paid by the Society in the case of owners who are unable to afford such fee.

"And the opinion of the High Court, Saorstat Eireann, is sought as to whether I was right in law in dismissing the said complaints."

Mr. Liston, continuing, said: "Portion of the case stated related to the Justice's ideas of what he regarded as the charitable work of the Society. It is a matter in which opinion will be divided whether it is charitable to employ persons to treat animals who have no special skill to do so. The Court is only concerned with the question whether the activities of this body contravene the provisions of the Veterinary Surgeons Act. Even if their work is charitable, if they contravene the section they should be convicted."

Mr. Justice Hanna: The Council think that there should be a veterinary surgeon attached to this van?

Mr. Liston: Yes; and a good deal of correspondence took place between the Veterinary Council and this body. The Veterinary Council cannot give way to what this body asks and the correspondence reached a stage at which the body defied the Council and they had to bring a prosecution. They have refused to employ a veterinary surgeon, and the position remains at that.

Mr. Price, K.C.: They have refused to employ a veterinary surgeon to go with the van. I think the suggestion was that he should go around with the van, and we said we could not pay a man to go around with the van.

Mr. Justice Hanna: You may take it that no veterinary surgeon in Dublin is in his yard all the time, and that the work is done by someone else.

Mr. Liston: I do not think it was ever suggested that a veterinary surgeon was to go around with the van.

Mr. Price: What is he to do? Is he to be merely ornamental?

Mr. Justice Hanna: Supposing people know that I have spent several years looking after dogs, and a man comes to me and says: "My dog is very bad" and I give him charitable advice. I do not think there are any merits in this case. However we will administer the law. It is a different thing from bringing cats and dogs, if a man comes to you near Limerick and says: "My horse," or "My pig is very bad." You say: "I cannot assist you because you are able to pay." The man says: "I am not able to pay my annuities or my rates. It is seven miles from Limerick. How can I get a veterinary surgeon? It would cost two or three pounds to bring him out!" They wrote so many letters to each other that they got cross in the end. That is the usual result of a long correspondence. There are two or three Animal Dispensaries here. I suppose they have veterinary surgeons?

Mr. Binchy, S.C.: I am told they have.

Mr. Price, K.C.: This is the only van in Ireland which runs for the benefit of the country people.

Mr. Justice Hanna: Suppose I take a dog to the Dogs Home here. They do not take any payment for it, but I put five shillings in the box; are the Corporation who run the Dogs Home practising veterinary surgery? If you do not want a veterinary surgeon to go around with the van, appoint somebody as Honorary Veterinary Surgeon.

Mr. Cullinan: We could not get one.

Mr. Justice Hanna: It is a difficult question to decide. We will go on at any rate and administer the law. I think you should concur in a charity of this kind by appointing someone as Honorary Veterinary Surgeon, one who, without being required to go around in the van, would deal with any case of difficulty that might arise.

Mr. Binchy: Whether we succeed or not, your lordship's suggestion will be valuable to us.

Mr. Justice Hanna suggested that during the luncheon interval the parties should consult with a view to endeavouring to arrive at some arrangement.

On resuming after the luncheon interval, Mr. Binchy, S.C., addressing Mr. Justice Hanna, said: "During the luncheon interval I had an opportunity of discussing your lordship's observations

with Mr. Louis Magee, who is the only member of the Veterinary Council who happens to be in Court. He feels, and he is quite certain, that the Veterinary Council would feel, if they heard your lordship's observations, that they ought to have an opportunity of considering whether there is any practical *modus vivendi* to be arrived at between them and the defendant Society. We considered the question of getting in touch with Professor Craig and other Dublin members of the Council to-day, but they are holding an examination and we could not get in touch with them. I understand that there will be a meeting of the Council in January, and, apart from that, it will be possible to get in touch with all the members and consider the alternatives to proceeding with this case. Having regard to that, I ask your lordship to adjourn this case to an early date next Sitting."

Mr. Price, K.C.: I thoroughly agree with what Mr. Binchy has said. I am very glad your lordship has thrown out these observations, because I think we may be able by some such means to come to some arrangement both for the good of the Council and of the Society.

Mr. Justice Hanna: I think the attitude taken by Mr. Binchy and the Council is quite proper. This is a case in which the Council, without insisting on their extreme technical rights and asking the Court to decide in strict law, can themselves in the interests of charity and of the poor people, take a course which would enable the Society to comply with the letter of the law if not with its spirit. I am quite sure that no one wants to embarrass the very good work done by this local Society in Limerick, and at the same time everyone would like to see the Veterinary Council protected as far as possible by a decision of this Court. My suggestion was that someone should be appointed veterinary surgeon or honorary veterinary surgeon.

Mr. Binchy: The first of the alternatives just mentioned by your lordship would be the more likely to commend itself to the profession—not an honorary but a practical appointment: I think that that would be quite possible.

Mr. Justice Hanna: An honorary veterinary surgeon—a veterinary surgeon, but not fee-d.

Mr. Binchy: It was suggested to me that it would be better, at the moment, not to suggest any particular means until the Council have an opportunity of considering the matter.

Mr. Justice Hanna: We all know Mr. Magee by reputation.

Mr. Price: He is a difficult man to tackle, if you do not tackle him in the right way.

Mr. Justice Hanna: Who are in the Council?

Mr. Binchy: There are a number of gentlemen, some of whom do not reside in Dublin at all.

Mr. Justice Hanna adjourned the case until the next term.

. . . . . .

The summonses came for review before the High Court, Dublin, constituted by Mr. Justice Sullivan (President of the High Court), Mr. Justice Hanna and Mr. Justice O'Byrne, on Thursday, May 3rd, 1934.

Mr. Binchy, S.C., and Mr. W. O'B. Fitzgerald now appeared for the Veterinary Council, Mr. Price, K.C., and Mr. Cullinan being Counsel for the defendants.

Mr. Binchy said he regretted to say that the parties had not come to any accommodation. The case had not been opened at any great length before Mr. Justice Hanna, because both parties felt that something might be done to reach a *modus vivendi*. He was not in a position to state the details of the discussion which had taken place between the parties, nor was his solicitor. The Veterinary Council had indicated that they were prepared to consider by what means this Society could carry on its work within the law, and they found themselves at this particular moment in the position that they conceived it to be their duty as being persons upon whom statutory duties were cast to go on with this discussion unless the defendants could see their way to make some proposal that would put them within the law, or adopt some proposal to that effect.

Mr. Justice Hanna said if the Court decided in favour of the Veterinary Council compromise would be at an end and the result would be that the cats and dogs of people who could not afford to pay veterinary surgeons' fees would die.

Mr. Binchy: I should hope that that would not be the result of a conviction.

Mr. Justice Sullivan suggested that, if there was a chance of a *modus vivendi* being arrived at, the case should stand adjourned, and be placed on the list again when an arrangement was arrived at. There was one member of the Court, Mr. Justice Hanna, who would give the parties any assistance he could.

Mr. Binchy said the suggestion in reference to Mr. Justice Hanna would be welcomed by one member of the Veterinary Council who was in Court and who would mention it to his colleagues.

Mr. Justice Hanna expressed his willingness, if the parties could not agree to an arrangement, to give any help he could in the direction of settling the matter.

The case accordingly stood adjourned.

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The Appeal Upheld

Mr. Justice Sullivan, Mr. Justice Hanna and Mr. Justice O'Byrne resumed the hearing of the Appeal in the High Court, Dublin, on October 22nd, 1934.

Mr. Binchy and Mr. W. O'B. Fitzgerald appeared for the Council; and Mr. Price, K.C., and Mr. Cullinan for Mr. Planton and the dispensary.

Mr. Justice Hanna now mentioned that a conference had taken place in connection with the suggestion he had made at an earlier hearing, that the case was one in which, without departing from their technical rights, the Council could, in the interests of charity, take a course which would enable the dispensary to continue its work under conditions which, if not within the letter of the law, would not infringe its spirit, but that conference had not accomplished what they had hoped.

Mr. Binchy, referring to the statement that this van, operated as mentioned, was the only institution of its kind in Ireland, said that he understood that there were similar vans in England.

Mr. Justice Hanna: And all over Europe.

Mr. Binchy contended that the verb "practise," as used in the Sub-Section meant "to practise," irrespective of whether one practised for reward or not, and consequently defendants came within the Sub-Section.

Mr. Price submitted that the provision was directed to the carrying on of a trade, or the setting up of a business for reward; and that "practise for reward" was the meaning of the Act.

JUDGMENT

Mr. Justice Sullivan, giving judgment, said that on the facts stated it would appear to him that

Mr. Planton was practising as a veterinary surgeon, and that the People's Dispensary for Sick Animals of the Poor, by sending the van round, was holding itself out as prepared to practise veterinary surgery.

In his opinion, on the facts stated by the Justice, the summonses should not have been dismissed, and there should have been a conviction.

Mr. Justice Hanna and Mr. Justice O'Byrne agreed.

The case accordingly was remitted to the Justice to be dealt with in accordance with this finding.

Mr. Binchy said that the Council had done everything in their power to meet defendants and he was instructed to ask for costs.

Mr. Price said that as this was the first case of the kind under the Act, the Court should not give costs.

The Court allowed the Council the costs of one day's hearing.

From *The Veterinarian*

November, 1834

. . . . But such is the way in which our continental brethren too frequently conduct their controversies. There are two French veterinary periodicals—the "Recueil," and the "Journal." They are edited by the very *élite* of the French school, and they have both essentially contributed to the progress of veterinary science in France; but they verify the old adage, and Messrs. of the "Recueil," and the "Journal," seem to hate each other with perfect hatred, and suffer no opportunity to escape of exposing and annoying each other. Each gives an analysis of the essays contained in some preceding number of the other. Were this fairly conducted, we should somewhat object to it: it would be a kind of literary piracy and robbery; it could proceed from no other motive than the desire to limit each other's sale; and in this way they would both succeed to a degree which we wonder they are not wise enough to foresee. But the analysis is not fairly conducted. Every little error in the communications to each is exposed, magnified, mis-represented, and condemned as an unpardonable literary blunder and falsehood; and, frequently, the respective editors proceed to personal attacks on each other.

Are they not aware to what degree they must lower themselves in the estimation of their readers and the public, when they can thus sacrifice good feeling, and, sometimes, literary honesty? Can they wonder if it is the general remark that their journals are not instructive as they used to be? Who will contribute to either journal, when he knows that he is offering himself to the other a sacrifice on the altar of jealousy and malice? Can they not see how fatally they are sacrificing the interests of science? In the "Recueil" for July was a most unwarrantable attack on M. Dupuy. In that for August there is not any "Analyse." The analysis in the "Journal" for that month was confined to a brief detail of the principal matter; that in the July number contained nothing offensive, but a sly sneer at M. Gaulet. May we hope that this is the commencement of a better era? That journal will deserve the thanks of the public, and of the friends of veterinary science, which first ceases to disgrace its pages with these *new* and abominable analyses.

In Parliament

The following questions and answers have been recorded in the House of Commons recently:—

Foot-and-Mouth Disease

Mr. William Nicholson asked the Minister of Agriculture whether in any of the recent outbreaks of foot-and-mouth disease, the cause or source of infection has been ascertained; and whether any of the cattle first affected in any of the outbreaks have been imported into this country?

Mr. Elliot: During the past three months, seven outbreaks of foot-and-mouth disease have occurred which could not be attributed to previous cases in this country. In none of these outbreaks was the source of infection definitely established, and in no case is there reason to believe that animals imported into this country were the first to be affected.

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Warble-fly Pest

Sir Arthur Michael Samuel asked the Minister of Agriculture whether, in order to exterminate the warble-fly pest in cattle, he will take steps to encourage stock owners to dress their cattle with the derris-root preparation experimentally for five years; and then, if the results are satisfactory, will he make a compulsory order for its use thenceforward for a limited period?

Mr. Elliot: I am advised that derris-root preparations have been shown to be highly efficacious in the destruction of warbles in cattle, and their use in reducing the prevalence of the pest is recommended in a leaflet issued by my Department for the guidance of farmers. The question of the issue of an Order requiring the dressing of cattle is under investigation.

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Dublin Horse Show (British Army Officers)

Mr. Albery asked the Financial Secretary to the War Office whether there is any official prohibition against British officers taking part in the Dublin Horse Show?

The Financial Secretary to the War Office (Mr. Douglas Hacking): No, Sir. Invitations have been received from the Royal Dublin Society for a British Army team to compete in the International Military Jumping Competition, which have not been accepted on the ground of interference with the requirements of military training. Applications from individual officers to compete under their own arrangements would be considered on their merits.

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Milk Marketing Scheme

Brigadier-General Clifton Brown asked the Minister of Health whether he will arrange for a conference to be held between the Ministry of Health, the County Councils' Association, and the Milk Board on the difficulties which have arisen over the Accredited Producers' Scheme; and whether he will consider regulations on the lines of the Milk Reorganisation Committee's report which the county councils could operate immediately?

Sir H. Young: It would, I think, be for the Milk Marketing Board, as the body responsible for preparing the Accredited Producers' Scheme, to call such a conference, but if they decide to do so I shall be glad to arrange for the representation of my Department. As regards the second part of the question, I have no power to prescribe

the conditions to be complied with by accredited producers.

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IMPORTED MILK PRODUCTS

Mr. LAMBERT asked the Minister of Health whether he will cause investigation to be made into the health of the animals producing the milk and into the cleanliness of the manufacture of the milk products imported from foreign countries?

Sir H. YOUNG: I do not consider that such an investigation is needed at the present time. The interests of public health are protected by the facts that imported milk is subject to special bacteriological conditions which do not apply to home-produced milk and that all milk products are subject to examination at the port of entry to ensure that they are fit for human consumption.

Mr. LAMBERT: Can milk drawn from a diseased cow and made up into butter in a dirty condition be considered to be fit for human consumption?

Sir H. YOUNG: That enquiry begs the question. The state of affairs is that we have a very effective safeguard in the inspections at the port of entry to which I have referred.

Mr. LAMBERT: But does the inspection of my right hon. Friend enable him to detect whether the milk comes from diseased cows?

Sir H. YOUNG: There is a very substantial measure of practical control.

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EGG AND POULTRY COMMISSION (CHAIRMAN).

Mr. R. J. RUSSELL asked the Minister of Agriculture when the report of the Poultry Commission will be issued?

Mr. GLOSSOP asked the Minister of Agriculture who is now the chairman of the Poultry Commission; and when the Commission will present its report?

Mr. ELLIOT: I am glad to have this opportunity of informing the House that I have invited Mr. F. N. Blundell to be Chairman of the Reorganisation Commission for Eggs and Poultry for England and Wales, and that he has accepted my invitation. Mr. Blundell has served as a member of this Commission since its constitution. He also rendered valuable services as a member of the Imperial Economic Committee from 1926 to 1931, and as a member of the Reorganisation Commission for Milk. I understand that the Commission is now preparing its report, which it hopes to complete by the end of this month.

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RABBIT-TRAPPING

Mr. MANDER asked the Home Secretary whether he will consider the advisability of appointing a committee to investigate the present position with regard to the use of steel rabbit-traps; and what effective alternative methods of trapping are available?

Sir J. GILMOUR: No, Sir. I do not think it necessary to set up such a committee.

Mr. MANDER: Will my right hon. Friend bear in mind the importance of ascertaining the real facts about alternative methods before any question of legislation is considered?

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MUSK RATS

Mr. G. HALL (for Mr. D. Grenfell) asked the Minister of Agriculture whether the work of searching for and trapping musk rats in this country is still being continued; and, if so, the number of trappers engaged, the counties concerned, and the cost to date?

THE MINISTER OF AGRICULTURE (Mr. Elliot): The work of searching for and trapping musk rats at large still continues in Shropshire, Worcester, Sussex, Surrey and Hampshire. The known centres of infestation are now localised in comparatively small areas in the counties named, and consequently it has been possible to reduce the number of trappers from a maximum of 39 early in 1933 to 15 men and a supervisor in Shropshire and six men in the other counties. The total cost of this service from April, 1932, to September 30th, 1934, has been £11,748, while the receipts, principally from the sale of skins, amount to £363.

Notes and News

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

Nov. 16th.—Annual Dance of the Royal (Dick) Veterinary Contingent O.T.C.

Nov. 19th.—Meeting of the Editorial Committee, N.V.M.A., at 2, Verulam Buildings, Gray's Inn, W.C.1, at 4 p.m.

Dec. 5th.—Meeting of the Lancashire Division, N.V.M.A., at Liverpool.

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PERSONAL

Appointments.—At a meeting of the Veterinary Joint Sub-Committee of the West Sussex County Council on October 26th, the following gentlemen were appointed as Assistant Veterinary Officers: Mr. C. Crompton, M.R.C.V.S., D.V.S.M., Harper Adams Agric. Coll., Newport, Salop; Mr. G. S. Reid Chalmers, M.R.C.V.S., Moorside, Lightwood Road, Buxton; Mr. A. D. Campbell, M.R.C.V.S., Fern Cottage, Settle, Yorks., and Mr. G. Warnock Begg, M.R.C.V.S., Parkhall House, East Kilbride, Lanarkshire.

The following appointments (Assistant Veterinary Officers) have been made to the staff of the Veterinary Department, Corporation of Birmingham: Mr. S. L. Hignett, B.Sc. (Lond), M.R.C.V.S., from the staff of the Royal Veterinary College, and Mr. C. M. Peatt, M.R.C.V.S., D.V.S.M., who was Assistant to Mr. George F. Banham, of Stratford-on-Avon.

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On Leave.—The List of Colonial Service Officers arriving on leave from the Colonies and Protectorates, etc., during the month of October, 1934, includes the names of the following veterinary officers: Mr. R. B. H. Murray (Uganda), and Mr. J. Anderson (Kenya).

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The London School of Hygiene and Tropical Medicine has appointed Mr. Kenneth Mellanby, B.A., PH.D., to be Wandsworth Scholar. The purpose of the Scholarship is Research in Tropical Medicine, and the appointment is for a period of two years.

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FOOT-AND-MOUTH DISEASE: FURTHER OUTBREAKS

The Ministry of Agriculture issued the following statement on Sunday last:—

"The existence of foot-and-mouth disease was confirmed on Saturday among cattle at Bisley, near Stroud, Gloucestershire. The area subject to restrictions in the movement of animals lies in the counties of Gloucestershire and Wiltshire.

"Another outbreak in Gloucestershire was confirmed by the Ministry on Saturday night. A herd of 28 cattle and 30 pigs at Lower Morton, Thornbury, were condemned. A stand-still order

over a five-mile area around Thornbury has been imposed.

"A further outbreak was confirmed yesterday at Middle Rasen, near Market Rasen, Lincs. Thirteen head of cattle and 15 pigs have been slaughtered and the carcases burnt. The Ministry has now paid out over £20,000 in compensation to farmers in the district for stock destroyed."

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R.C.V.S. OBITUARY

Barrett, William Freeman, Barrister-at-Law, The Limes, Parson Drove, Wisbech. Graduated London, July 4th, 1881; died October 24th, 1934, aged 74 years.

Clunas, Robert, The Elms, Wollerton, Market Drayton, Salop. Graduated Glasgow, July 23rd, 1886; died November 3rd, 1934, aged 73 years.

Hamilton, Thomas Ballantyne, 380, Pollokshaws Road, Glasgow. Graduated Glasgow, May 24th, 1888; died November 2nd, 1934, aged 68 years.

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Mr. W. Freeman Barrett

The death of Mr. William Freeman Barrett, which we record above with much regret, reduces the select number of members of our profession possessing both a legal and a veterinary qualification and removes one who, in 1910, held the high office of President of the Royal College of Veterinary Surgeons. Mr. Barrett's death has broken the very long association of his family with the Lincolnshire village of Parson Drove, for he was the son of the late Mr. Charles Freeman Barrett, agricultural engineer, and was born at Parson Drove in 1859. In 1881 he qualified with honours from the Royal Veterinary College. Shortly after securing this distinction he was appointed an Inspector at the Cattle Market, Deptford, which, in those days, was a recruiting station for cattle arriving from abroad. Subsequently Mr. Barrett commenced veterinary practice on his own account at New Cross, London. His practice grew rapidly, and he held several appointments under the various London Borough Councils.

Desiring to obtain a double qualification, Mr. Barrett read for, and was subsequently called to, the Bar, practising on the South-Eastern Circuit of London. He represented Deptford on the London County Council from 1908 to 1911.

For a period of 37 years Mr. Barrett was a Director of the firm of Harrison, Barber & Co., Ltd., of which company he was Chairman for the past eight years. In 1929 Mr. Barrett retired and returned to his native home at Parson Drove, but he did not relinquish his association with the Company, continuing up to the time of his death to be its Chairman. With all matters in the interest of Parson Drove, Mr. Barrett was very closely associated, and he was among those who were largely responsible in obtaining the main water supply for the village. At the time of his death he was President of the Parson Drove and District Band and also of the village Tennis and Bowls Club.

The Royal College of Veterinary Surgeons, who sent a floral tribute, were represented at the interment by Mr. F. E. Somer, F.R.C.V.S., of New Cross.

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Mr. James Latta

Concerning the late Mr. James Latta, M.R.C.V.S., Barrow, whose death was recorded in our issue of October 27th, *The Meat Trades Journal* says: "Mr. James Latta, M.R.C.V.S., veterinary surgeon and meat inspector to the Barrow Corporation for the past 20 years, passed away in a nursing home at Barrow on Tuesday, October 16th, at the age of 61 years. Mr. Latta had not been in robust health for a long time; he was always cheery, however, and had a wide circle of friends, and none better than those connected with the meat trades of Barrow. Prior to taking the post with the Barrow Corporation, Mr. Latta was in private practice at Ulverstone as a veterinary surgeon, and was well acquainted with the stock-breeders of the district. He was a very welcome guest at the annual dinners of the Barrow Master Butchers' Association, and his scholarly speeches, as well as the geniality of his personality were always appreciated. Mr. Latta was a lecturer to the meat trades classes, whilst they were being run at Barrow, and his death removes one who was highly respected and esteemed.

"At the funeral service at St. Paul's Church, Barrow, there was a large attendance, including, besides the family mourners, the Mayor of Barrow (Alderman T. Morton), the Ex-Mayor of Barrow (Alderman R. T. Dockeray), the Town Clerk of Barrow (Mr. W. A. Chislett), Alderman A. A. Haynes, Councillor A. B. McDowell, Councillor Marriott, Dr. J. Orr (Medical Officer of Health), and other officers of the Health Department of the Corporation and members of the National Association of Local Government Officers, the deceased having been President of the Barrow and District Branch for the past two years. Mr. F. W. Happold and Mr. E. Askew (Hon. Secretary) represented the Barrow Master Butchers' Association; Mr. Case, Jun., the Furness District Farmers' Association; Mr. Eric Postlethwaite, the Barrow Cattle Market; and there were many members of the general public.

"The coffin bearers at the deceased's residence and at St. Paul's Church were two representatives of the Local Government Officers' Association and two of the Barrow Meat Trades' representatives, and there were many floral tributes showing the respect and high esteem in which the late Mr. Latta was held."

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Baldrey.—On October 29th, 1934, at a London hospital, Bessie, the dearly loved wife of Lt.-Col. F. S. H. Baldrey, C.M.G., retired, late of the R.A.V.C.

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LONDON COLLEGE AND THE LORD MAYOR'S SHOW

For the second time in its recent history the Royal Veterinary College has been enabled to press its claims for their support upon the citizens of London through the effective medium of the Lord Mayor's Show. The character of the unit, which well fulfilled its function of arousing the interest of the onlookers, is indicated by the following reproduction of the related portion of the official programme of yesterday's popular event:—

Royal Veterinary College

Banner Founded 1791 — "Help to make the Royal Veterinary College worthy of your City." — Rebuilding 1934

Car depicting an animal operating theatre with students and nurses.

Four Veteran War Horses

Car depicting the world's largest nosebag gleaning for the 250,000,000 Farthing Fund in aid of the Royal Veterinary College Hospital.

Ye Olde English Forge in Full Blast.

(Each car is drawn by a team of 4 Suffolk Punch horses).

Some Animal Patients and their Nurses.

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VISIT OF ST. PANCRAS CIVIC PARTY TO THE ROYAL VETERINARY COLLEGE

The Mayor and Mayoress of Saint Pancras, accompanied by a large party of Councillors, recently paid a special visit to the Royal Veterinary College, Camden Town, to inspect the new buildings.

Sir Frederick Hobday, F.R.C.V.S., the Dean and Principal of the College, and Major-General Sir John Moore, F.R.C.V.S., received the party on behalf of the Governors; and members of the Council of the Students' Union Society were presented by Mr. Mc'Gubbin, the President.

After a speech of welcome by Sir John Moore, and an address on the work of the College by Sir Frederick Hobday, the visitors proceeded to view the new buildings, beginning with the Poor Out-Patients' Department. The party next viewed the new operating theatre, which is the latest of its kind in Europe, and were then shown a cinematographic film illustrative of the old buildings as they were years ago, together with some contrasting lantern slides of the various magnificent veterinary colleges in Germany, Holland, France and other countries.

Great interest was evinced in the department fitted up for the application of the Röntgen Rays.

The new horse-boxes, the stables and isolation premises were the subject of much favourable comment. The isolation premises have been specially designed not only for the accommodation of horses and dogs, but also for sick poultry.

Among the many curiosities seen in the students' Museum were such articles as ladies' umbrellas, tin tacks, coins, lead piping, gate catches, all of which, Sir Frederick Hobday explained, had been extracted from the stomachs of various animals. This museum is certainly unique, and ought to be better known to the inhabitants of London.

After a brief but very apt speech from the Mayor expressing the thanks of the whole party, tea was provided from the College refectory and served in the precincts of the Beaumont Animals' Hospital—the new premises which are allotted entirely to supplying the wants of the animals of the poor unable to pay the ordinary fees for the treatment of their pets.

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ROYAL VETERINARY COLLEGE V.M.A.

Thursday, October 25th, was a "red letter" day in the history of the Society. It was marked by a visit to the London hospital—the biggest and one of the most progressive institutions of its kind in the Kingdom. The visit was by way of a return exchange of courtesy, for during the summer the Royal Veterinary College Veterinary Medical Association, were hosts to the "Londoners," at Camden Town.

Fifty veterinary students availed themselves of the privilege, Mr. Holmes, the indefatigable president, being in charge. On arrival, the party was received at the Medical College and split up into sections, each section being under the guidance of a member of the London Hospital Medical Association. A most interesting and instructive tour had been arranged, embracing the outpatients' and inpatients' departments and ancillary services, while the interested visitors watched a number of operations.

After this most informative tour was completed, the party adjourned for tea in the Athenæum, a striking feature of which are the decorated panels, painted by a former student.

After tea a move was made to the clinical lecture theatre and a joint meeting was held, which had as its subject "Milk from Various Angles."

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data regarding a large number of mares are necessary and they must be accurate.

Yours faithfully,

South Zeal, O. Greig (Capt.).
Okehampton,
Devon.

Correspondence

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The Editor does not hold himself responsible for the opinions of his correspondents.

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BENEVOLENCE AND CHARITY

To the Editor of The Veterinary Record

Sir,—It was kind of you to publish a note about the difficulties which face the Council of the Victoria Veterinary Benevolent Fund. It has brought in subscriptions amounting to £4 4s. That is not a large contribution towards the deficit of £250! There are 3,000 members of the profession who do not subscribe to the Fund; if only one in six of these would contribute half-a-guinea a year all our present anxieties would be relieved.

Yours faithfully,

Fred Bullock.
Secretary.

Victoria Veterinary Benevolent Fund,
10, Red Lion Square,
London, W.C.1.
November 5th, 1934.

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"EXPERIENCE" AND DISEASE CONTROL

To the Editor of The Veterinary Record

Sir,—Mr. J. Tweedale Edwards' letter in *The Veterinary Record* of November 3rd, must be amusing to those practitioners who have read it. I, for one, do not agree with the statement that mere experience (yes, just mere experience) can never bring profound knowledge on any subject, etc.: surely, it is universally agreed that "practice makes perfect"—which perfection cannot be obtained without mere experience! Is there anyone more competent than the experienced practitioner to direct one to that end? It cannot be the profoundly read scholar or lecturer, since the practitioner is the backbone of the remainder. All these recommendations put forward by sitting committees are in themselves most edifying, but we lose sight of the fact that the human element is at fault and that it must be trained to obey the letter of the law, which should be clear, concise, and stringent—that is all. Control measures and eradication of disease would then follow without the attack by an army of specially read scholars and police, lost and bewildered in this imperfect world.

Yours faithfully,

Tenterden, F. C. Heathcote.
Kent.
November 5th, 1934.

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REQUEST FOR HORSE-BREEDING DATA

To the Editor of The Veterinary Record

Sir,—Could you allow me to ask your readers to assist in some research work which I wish to carry out regarding a possible influence on the breeding of horses? The results, if any, will be given to you, as well as to some scientists who are studying the breeding of domestic animals.

The data I require refer only to Great Britain and to mares which are known to have produced foals as a result of the services mentioned. Will those who can do so be kind enough to send me all dates in each year on which any such mares had service, stating the year referred to? I should like, if possible, in addition, to be informed of the sex of the resulting foals. No description of the mare is required. To obtain useful results